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FORMERLY

AMERICAN GAS LIGHT JOURNAL

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NEW YORK, SATURDAY, AUGUST 23, 1919

Subscription $3 per year
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AN ENGLISH WOMAN DOING HER PART DURING THE WORLD WAR

"An Epoch Making Influence" in the Gas Industry

"There have appeared from time to time epoch making influences in the history of the gas industry since 1792, when Murdock introduced gas for lighting. Some have been apparent at the time, while others are appreciated only after a lapse of years during which their influence has been at work.

"The introduction of Cast Iron Pipe about 1808 for distribution purposes greatly aided in making the gas industry permanently successful. Cast iron mains seldom require renewal except because of obsolescence due to existing mains being too small for the demands of modern industry."—W. R. Addicks, Vice-President, Consolidated Gas Company, New York City, on "Some Notes on Gas Standards," paper read before the New York Section Illuminating Engineering Society, Nov. 9, 1816.

The Cast Iron Pipe Publicity Bureau

1 BROADWAY NEW YORK

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Cleveland, Ohio

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American
Gas Engineering Journal

FORMERLY THE AMERICAN GAS LIGHT JOURNAL

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Widening of Scope of Electro-Galvanizing and Allied Industries Combined with Coal Costs Rising Out of Proportion to Gas Make This a Fertile Field for Industrial Gas Development

While Already Largely Employed There Are Sufficient Plants that Do Not Use Gas to Make a Practically Virgin Field in Many Cases—Need of More Intensive Study on Gas Man's Part

By GILBERT C. SHADWELL

For the gas man who wants to obtain business which will provide a steady "load" and long-hour consumption, the electo-galvanizing and allied industries will provide a fertile field for his resourcefulness.

It is a far wider sphere of activity than the mere words galvanizing or plating would indicate and embraces many subdivisions which might never have been suspected. It embraces plating in many forms. The plating factory, during the war in some cases, turned out bullet-jackets, cartridge cases, and many other metallic pieces too numerous to mention, in addition to their regular line. Others built machinery and parts for these and other such purposes, hence in many instances, their scope has been considerably widened and will doubtless remain so.

Gas Used in a Vast Number of Operations

In a vast number of the operations innvolved, gas is used and the gas man can assist to good advantage. It is the purpose of this article suitably to describe this industry and to include some of the many appliances and other gas consuming devices employed. In some cases it will be seen that gas is utilized directly for its heat in warming liquids where required for washing, pickling, etc. In other cases the heat is used indirectly such as where steam is needed (from a gas-fired steam boiler) or where a gas-operated air heater is employed for supplying warm air for drying the parts either before or after treatment or both.

Platedware includes articles intended for various uses consisting of an inferior metal or alloy covered by one of the precious metals, with the object of giving them the appearance of gold, silver, nickel, etc. Before the introduction of electro-plating the method employed for silver-plating (the invention of which in 1742 is associated with the name of Thomas Bulsover, of Sheffield, England) was to fuse or burn together by a flux of borax, a thin sheet of silver on each side of an ingot of base metal, generally copper, or German silver, which is an alloy of copper. The silver plates were firmly wired to the ingot, which was then placed in a heated furnace and brought nearly to the fusing point of the silver. The artisan knew the exact moment to withdraw the ingot. When cold it was rolled down to a sheet, and from such sheets, "silver-plated" articles were made. Articles like dish covers were originally only silver-plated on one side, and after being worked into shape were tinned inside with pure tin. In Birmingham, England, bar-copper was the base metal used; when bare of silver this showed blood-red. The Sheffield manufacturers, on the other hand, used shot-copper mixed with brass (an alloy of copper and zinc) in the proportion of 4 or 6 to 1. In this way they got rid of the redness of the copper and rendered it harder, and their product is the "old Sheffield plate" that has become famous all over the world. This method of plating rapidly declined with the introduction of the newer process of electro-plating by which it has been superseded. Plating with nickel and other metals is extensively used for lavatory fixtures, bedsteads and other articles of upholstery, and for various parts of bicycles, steamships, railway carriages, etc. Steel sheets are also plated with

nickel for cooking purposes, and iron is plated with brass.

The writer believes that every gas man is familiar with the term "electrolysis." When the passage of an electric current through a substance is accompanied by definite chemical changes that process is called electrolysis and the substance is termed an "electrolyte."

The Process

As an example we will consider two copper plates in a solution of such a copper salt as copper sulphate ($CuSO_4$) and that an electric current flows continuously from one to the other through that solution. The bulk of the solution will be unaltered but that copper plate by which the current enters the solution (connected to the positive pole of the generator) will dissolve away and enter the electrolyte as copper sulphate. In addition, however, copper will be deposited on the other plate, this being obtained from the solution. That plate connected to the positive wire is called the "anode." The other is called the "cathode" (or "kathode"). The copper "in solution" is said to be in the form of "ions." This short explanation, therefore, will give the less informed reader a hint as to the principles underlying the process as carried out commercially and it will make the rest of the story a little clearer.

It can readily be seen that to deposit nickel we only need a nickel anode and an electrolyte of a nickel salt in solution. The part to be plated forms the cathode.

Sometimes the metal is deposited in a pulverulent form, at others as a firm tenacious film, the nature of the deposit being dependent upon the particular metal, the concentration of the solution, the difference of potential between the electrodes, and other experimental conditions. As the durability of the electro-deposited coat on plated wares of all kinds is of the utmost importance, the greatest care must be taken to ensure its complete adhesion. This can only be effected if the surface of the metal on which the deposit is to be made is chemically clean. Grease must be removed by potash, whiting or other means, and tarnish by an acid or potassium cyanide, washing in plenty of water being resorted to after each operation.

Failure to Sell Gas Due to Lack of Real Understanding

This is where the gas man can offer his services. Hitherto steam has been considered a cheap commodity or perhaps "because it's there," but coal has increased in value far more (as a percentage) than gas, and so has labor, so that the cleaning tanks which were previously heated by such means can often be more economically heated by gas. Moreover, it must not be forgotten that the steam-heated tanks are seldom insulated so that the heat losses are quite appreciable—in fact, on a basis of comparison a steam-heated tank (uninsulated) will probably show an efficiency of only about 30 per cent of that of one heated by gas (properly constructed) at the very best.

There is plenty of encouragement therefore for the gas man who will use a little thought in going after this class of business.

I have often heard the argument: "Why should I put in a gas-heated tank furnace when I've got steam already available? It costs me nothing." Well, with the exception of cases where steam is given in with the rent it is very untrue to say it costs nothing. If the gas engineer will measure up the steam used and include the losses and compute the equivalent in coal and labor he will be able to show that the so-called "no cost" item is often a pretty fair wad.

Facts of this sort will help a whole lot in getting the business, but the whole trouble is that the prospect usually does not know, and the gas man can't tell, so there's often no deal.

The vats for depositing may be of enameled iron, slate, glazed earthenware, glass, lead-lined wood, etc. The current densities and potential differences frequently used for some of the commoner metals are given in the following table, taken from McMillan's Treatise on Electro-metallurgy. It must be remembered, however, that variations in conditions modify the electromotive force required for any given process. For example, a rise in temperature of the bath causes an increase in its conductivity, so that a lower E. M. F. will suffice to give the required current density; on the other hand, an abnormally great distance between the electrodes, or a diminution in acidity of an acid bath, or in the strength of the solution used will increase the resistance, and so require the application of a higher E. M. F.

	Amperes		Volts
Metal	Per Sq. Diam. Cath. Surface	Per Sq. In. Cath. Surface	Across Anode and Cathode
Antimony	0.4-0.5	0.02 -0.03	1.2
Brass	0.5-0.8	0.03 -0.05	3.0 -4.0
Copper (acid bath)	1.0-1.5	0.065-0.10	0.5 -1.5
" (alkali bath)	0.3-0.5	0.02 -0.03	3.0 -5.0
Gold	0.1	0.006	0.5 -4.0
Iron	0.5	0.03	1.0
Nickel (at first)	1.4-1.5	0.09 -0.10	5.0
" (after)	0.2-0.3	0.015-0.02	1.5 -2.0
" (on zinc)	0.4	0.0 -5.0	4.0 -5.0
Silver	0.2-0.5	0.015-0.03	0.75-1.0
Zinc	0.3-0.6	0.02 -0.04	2.5 -3.0

Large objects are suspended in the tanks by hooks or wires, care being taken to shift their position and so avoid wire-marks. Small objects are often heaped together in perforated trays or ladles, the cathode connecting-rod being buried in the midst of them. These require constant shifting because the objects are in contact at many points, and because the top ones shield those below from the depositing action of the current. Hence processes have been patented in which the objects to be plated are suspended in revolving drums between the anodes, the rotation of the drum causing the constant renewal of surfaces and affording a burnishing in action at the same time. Care must be taken not to expose goods in the plating bath to too high a current density, else they may be "burnt"; they must never be exposed one at a time to the full anode surface, with the current flowing in an empty bath, but either one piece at a time should be replaced, or some of the anodes should be transferred temporarily to the place of the cathodes, in order to distribute the current over a sufficient cathode area. Burnt deposits are dark-colored, or even pulverulent and useless. The strength of the current may also be regulated by introducing lengths of German silver or iron wire, carbon rod, or other inferior conductors in the path of the current, and a series of such resistances should be provided close to the tanks. Ammeters to measure the volume and volt-meters to determine the pressure of current supplied to the baths, should also be provided. Very irregular surfaces may require the use of specially shaped anodes in order that the distance between the electrodes may be fairly uniform.

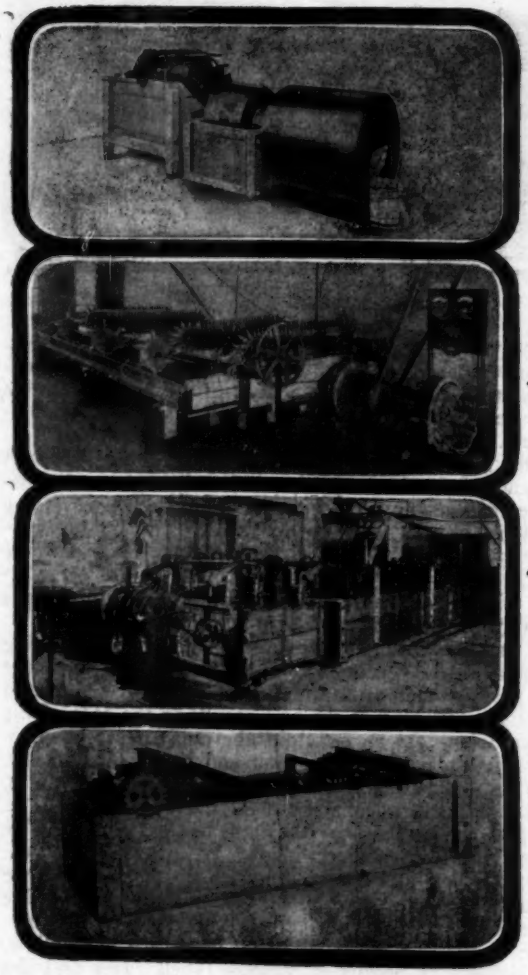

FIG. 1

FIG. 2

FIG. 3

FIG. 4

otherwise the portion of the cathode lying nearest to the anode may receive an undue share of the current, and therefore a greater thickness of coat. Supplementary anodes are sometimes used in difficult cases of this kind. Large metallic surfaces (especially external surfaces) are sometimes plated by means of a "doctor," which, in its simplest form, is a brush constantly wetted with the electrolyte, with a wire anode buried amid the hairs or bristles; this brush is painted slowing over the surface of the metal to be coated, which must be connected to the negative terminal of the electrical generator. Under these conditions electrolysis of the solution in the brush takes place. Iron ships' plates have recently been coated with copper in sections (to prevent the adhesion of barnacles,) by building up a temporary trough against the sides of the ship, making the thoroughly cleansed plate act both as cathode and as one side of the trough.

While the above is the standard method which has been adopted for carrying out the work it is only natural to suppose that improvements have been incorporated for the purpose of making the process more nearly automatic. Among such apparatus, there are:

(1) Automatic self-emptying plating barrels for plating small articles.

(2) Automatic moving tanks for plating or electro-galvanizing articles of medium size.

(3) Automatic pickling, and cleaning machines for pickling brass and steel stampings.

(4) Automatic bar iron and pipe tanks for plating or galvanizing all elongated material.

(5) Automatic wire plants for cleaning, plating and rinsing round or flat wire in continuous lengths.

There are also equipments which will wash and dry plate pieces automatically. This apparatus first washes the material in clear water; it then carrier the articles through a draining cylinder; they are then carried through the drying drum.

This machine, without the drying drum, is used for washing saw cuttings from screw machine products, or other articles.

With regard to other special equipments, the pickling and cleaning apparatus automatically carries all small material, such as cartridge cases, stampings, bolts, nuts, screws, etc., through different solutions, removing scale, cleaning, washing and drying. Sold in any number of drums, with or without dryer. (See Fig. 1.)

The bar iron and pipe tank cleans, electroplates or electrogalvanizes and washes such material as bed posts, pipe, conduit pipe, bars, angles and all elongated material. (See Fig. 2.)

The wire plant automatically cleans, electrogalvanizes or electroplates, washes, dries and reels up either flat or round wire in long lengths. (See Fig. 3.)

The automatic moving tank is used for electroplating of nickel, brass, copper or tin, or electrogalvanizing on all articles of medium size. (See Fig. 4.)

From the gasman's standpoint the cleaning and drying equipment deserves first attention. A study of Fig. 5 will give a pretty good idea of the method of operation.

This apparatus consists of two perforated drums and a drying cylinder, mounted on a shaft and rotating on an "I" beam framework.

The first drum rotates in a steel tank in which an alkaline cleaning solution is maintained. A steam coil installed in the tank heats the solution to the proper temperature.

The second drum rotates in a wooden tank containing clear running water.

The drying cylinder is heated by means of a gas burner of the atmospheric "Tee" type (see Fig. 6.) located underneath. A sheet metal hood encases the drying cylinder for the purpose of conserving the heat.

The machine is used for cleaning or removing oil, grease or dirt from all metal stampings, screw machine products, etc.

The articles are put into the loading end of the machine and are automatically carried through each drum by means of a spiral and out the drum by a pick-up

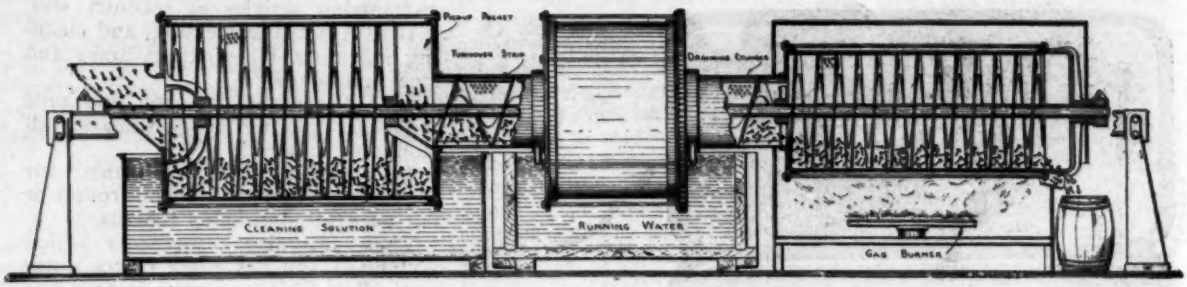

FIG. 5

pocket. In going from one drum to the next, they pass through a connecting or draining cylinder, where the solution is thoroughly drained into the tank from which the articles came. The articles are finally delivered automatically from the drying cylinder.

A spiral fastened to the inside of the drums enables different sizes to be put through without one batch overtaking and mixing with a previous batch.

The vast amount of labor saved by the use of this apparatus is readily apparent. At the same time it produces an article of uniform, high grade quality.

A 24 in. diameter machine will handle 30 barrels per 10 hour day and a 36 in. diameter machine will handle 100 barrels per 10 hour day.

ADVANTAGES OF SO HANDLING

It is claimed that among the principal advantages in having material handled this way are:

(1) The saving of time and labor.
(2) The saving of chemicals.
(3) The production of better work, and
(4) The saving of floor space.

In the case of the larger machines or where the product is liable to be affected by the products of combustion of the gas, a gas-fired air heater is employed and the outlet connected to the end nearest the receiving barrel. In this way the heated air which travels (by means of a blower in) a direction contrary to the passage of the parts gives the greatest drying effect to the parts nearest the end and gradually passes through the drying barrel, until it leaves at the draining cylinder. By referring to Fig. 5 this will be made clear. It will thus be seen that the drying part of this work is of considerable importance. The writer can cite instances where plants require a gas consumption of from 25 cu. ft. per hour to 1,000 cu. ft. per hour per machine, the consumption depending not so much whether the drying is carried out by direct heat or by air heated by means of an air heater, but depending upon the size, shape, weight, of the parts and the rate of drying. It, therefore, is a useful field to be followed, and as there are quite a number of relatively inefficient plants in operation, it is well worth while giving a little study to those equipments which embody gas drying accessories of a more desirable nature.

As mentioned previously, there are several types of automatic machines in use and in the case of quite a few, gas drying is not by any means always included. It is the writer's opinion that most washing machines should include the necessary drying equipment which may generally consist of a burner located under an additional drum attached to the draining cylinder.

Fig. 7 shows an automatic rotary barrel and washing apparatus which is used for washing or cleaning miscellaneous small material such as screw machine products, steel forgings, small castings, etc. Any solution may be used such as water, a cleaner, soap and water, oil, etc.

The material to be cleaned is emptied into the receiving end of the drum and is carried through as the machine revolves and finally up and through the draining cylinder and automatically delivered. Any solution carried up with the articles is drained back again into the tank.

It will be noted that an extra drum for drying by gas is included and is covered with a hood.

It has been found in the case of all of these drying equipments that one or more atmospheric Tee burners are best for the small outfits; and a gas-fired air-heater and a suitable blower give the best results in the case of the larger units. As an example, the equipment shown in Fig. 7 has a barrel 15 in. long and 24 in. in diameter. The tank measures 28 in. wide, 36 in. long and 24 in. deep. The plating capacity of the barrel is 1,800 cu. in. average, the capacity of the tank being 104 gal. The drying drum, when direct heated, requires about 65 cu. ft. of gas per hour (maximum) to do the work at the normal speed of operation of the machine itself. The direct heat system is perfectly satisfactory on this machine as long as the parts being dried are not hollow, but as soon as hollow stampings (shell cases and the like) are dried, it becomes almost essential to use an air heater and blower and the heated air must travel in a counter direction to that of the parts.

Speed of the barrel—When plating, the barrel should turn at a speed of 4 to 5 revolutions per minute. The rotation should be with the top of the barrel traveling toward the front of the tank.

Emptying—When the plating is completed the barrel is run in the opposite direction at a speed of about one revolution per minute. When running in this direction, the automatic attachments open the door, and the plated articles which have been brought up by a pick-up pocket, run down the chute and into the waiting receptacle.

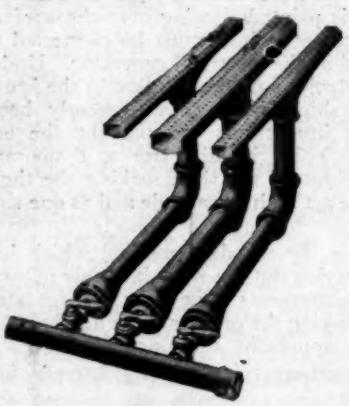

FIG. 6

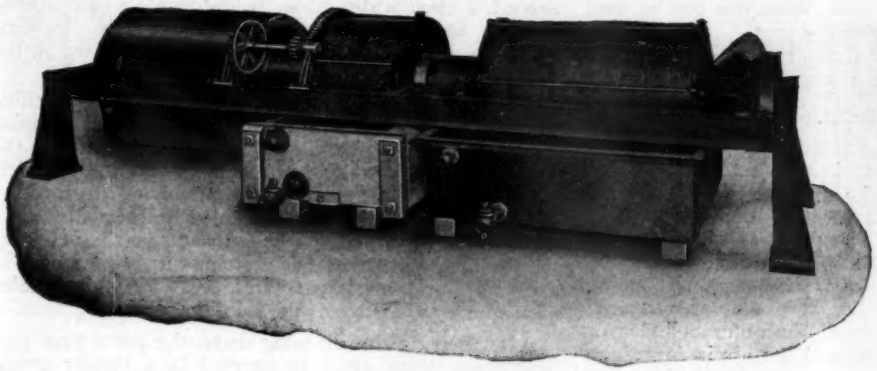

FIG. 8

Amperage required—A full load of material will require about 200 amperes. This of course is dependent upon the square surface of the material being plated.

Voltage required—Owing to its great efficiency, this barrel will turn out good work at 6 volts. A higher voltage will, however, do quicker work. The voltage is also dependent to a large degree upon the solution, kind of metal being plated, etc.

Time required—This barrel will deposit a light coating of brass or nickel in 10 to 15 minutes and an average coating in 20 minutes. It will deposit a heavy coat in 30 minutes.

Kind of plating—The machine will plate nickel, brass, copper, tin, etc. It will plate on all small material such as articles of hardware, keys, locks, tacks, screws, nails, bolts, nuts, washers, hinges, machine parts, can openers, clasps, buckles, safety pins, clips, small stove parts, staples, small stampings, small ferrules, caps, jewelry, trunk hardware, typewriter parts, pencil tips and in fact, all material that any other barrel will plate. It will also successfully plate a lot of articles such as material that nests, flat pieces, etc., that cannot be plated in any other barrel. The reason for this is that the rigid cathode conductor arms which are fastened to the shaft mix these parts up and also separate them as the barrel revolves.

We have already referred briefly to the automatic washing, draining and drying apparatus. It is a simple unit consisting of three connected slow rotating drums (washing drum, draining drum and drying drum) driven by sprocket and chain from a countershaft.

This device actually washes, drains and dries all small material, without extra handling from the time it is put into the machine until it is automatically delivered, ready for use.

When used in connection with the Automatic self-emptying barrel the complete equipment makes plating of small articles a continuous, uninterrupted process. It can, however, be used as a separate machine for drying material plated in other plating barrels.

Operation—In operation, the plated material is emptied directly through the chute into the washing drum. This has perforated sides and revolves in a tank of water. The articles which are being tumbled, are thoroughly washed and mechanically picked up by a pick-up pocket, and passed into the middle or draining drum, and from there, by means of the machine revolving, into a drying drum. In the latter drum the articles are dried

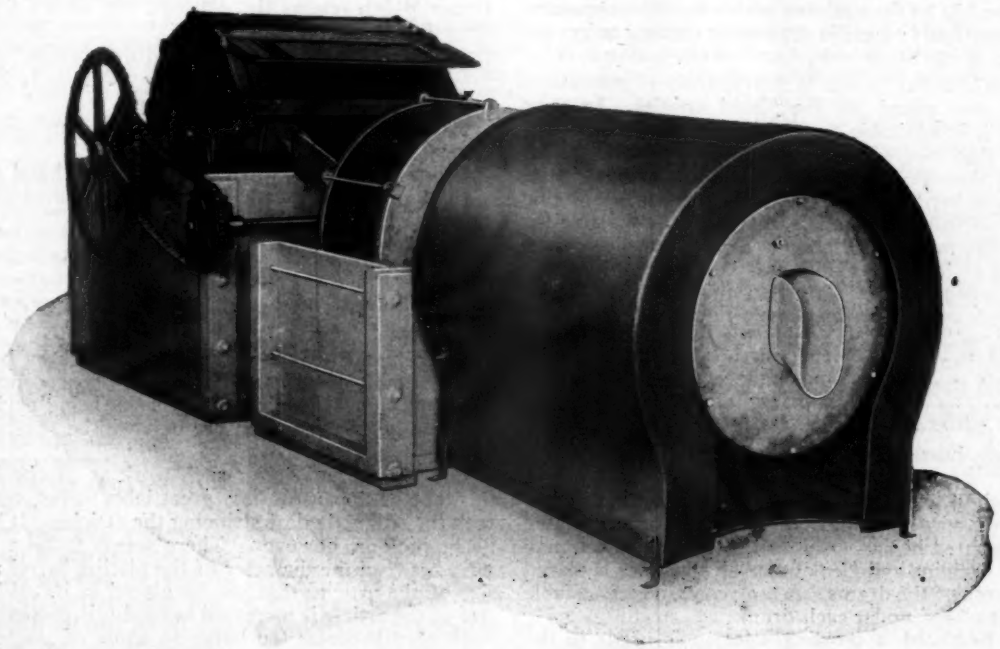

FIG. 7

either by means of hot saw dust, when this can be used or by hot air.

In the hot sawdust drier they are dried as follows: The articles are tumbled and mixed with hot sawdust which absorbs the moisture and heat and dries the material. As the apparatus is installed at an incline, the dried articles are advanced until they come to the delivery end, where they run out and as the machine revolves, the sawdust is sifted into the outer drum. When the sawdust reaches the outer drum, it is dried by means of a gas or fuel oil burner. The dried sawdust is again carried into the inner cylinder, by means of pick-up pockets, where it mixes with new material going through.

In the gas-fired hot air dryer the outer cylinder or sawdust container is omitted, and hot air is forced up through the drying drum.

The Pickling Drum

It is quite usual to add a pickling drum to this class of equipment when required and such an appliance is shown in Fig. 1.

All the above is done automatically and without the aid of internal conveyors owing to the fact that the machine is installed at an incline and the material naturally runs down hill as the machine revolves. The apparatus is simplicity itself; there is practically nothing to get out of order.

The machine can be run at any number of revolutions which is best suited for the plated articles. In some instances it is advisable to run the machine at a higher speed so that they will be tumbled and polished as they are going through the machine. As some articles travel through quicker than others, the machine is made so that it can be adjusted at an angle which will be suitable for carrying the material through. This is done by means of raising or lowering the delivery end of the machine, and is accomplished by simply turning two bolts which are located on the bracket supporting the roller bearings. The pick-up pockets above referred to may also be regulated so that they will pick up the desired amount of material at each revolution.

This apparatus is made in two sizes. The small one will dry the output of approximately 3 to 4 average size plating barrels and the large one of about 6 to 8 barrels.

Fig. 9 shows an illustration of an automatic pickling and rinsing apparatus. It consists of four perforated drums mounted horizontally, end to end, on a common shaft. A draining cylinder of smaller diameter is placed between each of the drums. A tank containing a suitable solution is placed under each drum.

In the first tank a pickling solution is used; in the second, a clear water rinse; in the third, a neutralizing solution, and in the fourth, a clear water rinse. In some instances a lubricating or oiling solution is used in the fourth tank.

The articles treated are advanced through the machine by means of a spiral fastened to the inside of the drums. A pick-up pocket at the end of each drum carries the articles up and into the draining or connecting cylinder. Here the material is thoroughly drained and advanced to the next drum. This work is aided by means of turnover strips placed lengthwise with and on the inside of the draining cylinder. These strips turn the work over and over as the machine rotates, so as to empty articles of as much as possible of the solution carried by them.

After leaving the draining drum the parts pass into the drying drum which is warmed by a burner or air heater as previously described.

For cleaning several machine products an extra draining drum is placed before the washing drum.

The following table gives an average of machines of this character.

	24-In. Diam. Drum	36-In. Diam. Drum
Length of cleaning drum (inches)	24	28
Capacity per hour (cubic feet)	10	24
Size of tank	32 x 33 x 20	36 x 49 x 24
Capacity of tank (gallons)	91	183
Floor space (with drum and draining cylinder only)	42 in. x 5 ft. 6 in.	4 ft. 9 in. x 7 ft. 9 in.
Floor space (with dryer, but without air heater)	42 in. x 8 ft. 0 in.	4 ft. 9 in. x 10 ft. 3 in.
Additional length when oil separating cylinder is included (inches)	24	30
Gas consumption per hour (direct heated), maximum (cubic feet)	55	65
Gas consumption per hour (indirect fired with air heater), average (cubic feet)	80	100

As the screws pass through this cylinder, the oil and part of the loose cuttings are sifted through the perforations and fall into a tank located underneath this cylinder. On the top of this tank is placed a perforated screen which retains the cuttings, but allows the oil to drop through to the tank.

This enables the oil to be used over again, and also prevents the washing or cleaning solution from being contaminated by the oil and cuttings.

The obvious advantages are that such a machine saves labor.

It does better work than can be done by hand dipping.

In cleaning screw machine products, it saves oil which can be used over again.

Requires little floor space.

It is very efficient.

The Plating Barrel

The alternative is to carry out the work by hand the same amount of gas (at least) must be consumed per hour but only a fraction of the work being performed, the total gas consumption per unit will be several times greater.

The plating barrel, for such work as can be done in this type of apparatus, is a great labor saver, compared with the old method of stringing the articles. It has had its limitations, however. There seems to be a certain ratio between the diameter of the plating barrel and the size of the articles that can be placed in it. When the size of the article is increased beyond this proportion the work then becomes too bulky to allow of proper tum-

bling, and in such cases that class of work must be done some other way.

In some instances manufacturers have increased the diameter of their barrels, but there has always been a certain restriction felt, owing to the fact that by increasing the diameter a large and heavier barrel is made necessary, together with the increased size and weight of the batch material to be plated. This in itself is no detriment, but in that type of barrel which has to be hoisted out of the solution to fill and empty there certainly must be a limit. It is hard enough work to hoist out the standard small barrels now on the market, without increasing their size sufficiently to be capable of plating much larger work. And this is why it has not been practical to make a much larger barrel than those now manufactured.

With the plating barrel the material is automatically emptied from the barrel by simply reversing its rotation. This is done by means of the countershaft. It is not necessary to lift the barrel out of the solution to fill or empty. Owing to this factor, a barrel of large diameter is a thoroughly practical apparatus instead of a theoretical possibility.

Such a plating barrel will plate material as cow bells, spikes, locks, pipe fittings, automobile hub caps, small castings, articles of hardware, etc., which would be entirely unsuitable for a small barrel. In addition to large pieces it will also plate all kinds of small material that can be done in a small barrel.

Avery important element in connection with this type of equipment is that large quantities of material can be plated at a time. It takes very little longer to load a large batch in this barrel than a small one in a small barrel, and in this way it is a big saver in labor over its smaller rival.

Owing to the large circumference and therefore large surface exposed to the anodes, articles plated in this barrel will be better tumbled and be more evenly exposed to the anodes than in a barrel of smaller diameter. This means that the work will have a better color and a more even, uniform deposit. Another feature is that it requires very little more floor space than a small barrel, and it will do three or four times the work.

This barrel will plate nickel, brass, copper zinc or tin.

When the plating is finished, the motion of the barrel is reversed, and a catch on the tank opens the door on the barrel and the plated material which has been brought up by a pick-up pocket is automatically delivered. Two or three revolutions empties the entire contents.

To put new material into the machine, you simply shovel it into the open panel, close the door, put the belt on the tight pulley, and the plating has already begun.

It of course must not be imagined that all electro-galvanizing and metal plating and cleaning work can be carried out automatically.

FIG. 9

PLATING METAL LATH

Take the case of electro-galvanizing metal lath (expanded metal). This is generally lowered into the plating bath by hand, washed and placed on a rack which is itself generally covered with metal lath or some convenient type of screen. This screen is supported by a framework surrounded by a jacket, within which several burners are placed. The direct heat is not generally harmful to the material being dried and of a reasonably large draft of air is caused to flow upwards, the drying can be accomplished in a very few minutes. A temperature of 50 deg. Fahr. above the atmospheric temperature is usually ample. A gas consumption of 150 cu. ft. per hour for such a size will be entirely satisfactory and the drying will be performed as quickl yas one tank will plate the standard pieces of metal lath or other similar material including the handling of it.

The burners to use should be of the atmospheric pipe kind and if desired may have multitude ports which are somewhat preferable to the drilled type for this kind of work, although either will do.

Every city and town of importance is doing one or more of the operations described in this article. Some use gas, some oil, and some use steam. Others are leaving matters to "nature."

Gas men will reap a rich harvest from these "nature lovers" it is hoped. Their output can be appreciably increased. Oil and steam are not as desirable as gas for obvious reasons. Such users must not be overlooked.

Piece-Work System as Applied to Specific Routine Operations a Happy Innovation

J. A. A. Beaudin Declares It Is Most Effective and Economical, and Insures a Steady Output

The supply of public utilities involves the performance of numerous routine operations in the consumer's home by various categories of employees operating individually and without supervision.

The reading of meters in situ, the delivery of bills and collection notices, and the collection of arrears are a few of these operations.

Until recent years, and even nowadays, the general practice has been to remunerate employees engaged in these various tasks on a flat or fixed rate salary, based either on the hour, day, week or month, with additional privileges respecting sickness, holidays, etc.

This made of remuneration makes possible the payment of wages for labor which has been only partially supplied, and since the actual supervision of his work is impracticable the employee is tempted to take advantage of this condition to occasionally, if not regularly, limit his activities, and the means he may use to conceal his shortcomings are only limited by his ingenuity and his morality, declared J. A. A. Beaudin in a paper presented at the recent annual convention of the Canadian Gas Association.

Does Not By-Pass Difficulties

Furthermore, an employee working under this system of remuneration is inclined to indiscriminately complete each task as he encounters it, without any regard whatever to the amount of time and expense involved, i. e., he will often devote an unwarranted amount of time to straightening out a difficulty, which if reported to the office, could be handled much more expeditiously and economically by an expert. In other words, a worker on a fixed salary does not by-pass difficulties—he leaves no residue.

This state of affairs has led our Company to devise and introduce a system of payment on a piece or commission basis as applicable to the various categories of these employees. This piece-work or commission system keeps the employee at his work, insures the full employment of his time, limits his absence from duty, prevents the payment of unearned wages, and regulates the output—it helps get the work done regularly and systematically, but it leaves a residue.

The piece or commission worker is interested in handling a miximum of cases in a minimum of time, so naturally the tendency is to handle the straight going jobs and by-pass difficulties whenever encountered no matter what the employer's interest; the employee's interest is in the opposite direction, as every stop he makes to overcome difficulties limits his wages, hence while this system has removed the necessity for outdoor supervision it has created a demand for closer indoor supervision over the work performed, and the piece-work system must be supplemented by a faithful follow-up system of by-passed jobs, without which it would prove a failure and cease to be economical and practical.

The piece-work system only works advantageously in districts where the clientele is dense or semi-dense; it is not effective in districts where the clientele is scattered. The piece-worker is entitled to a supply of work commensurate with his capacity, and his work requires to be properly sorted and routed so that he may carry it on under advantageous conditions. The employer's interest also demands this in order to keep the piece-work rating at a minimum and at the same time afford the employee an opportunity of earning a fair remuneration thereunder. Failure to give proper attention to this detail would result in the establishment of a higher piece-work rating than would otherwise be necessary.

Should All Be on Equal Footing

Employees of the same category should all be on equal footing and be given equal opportunities. They should permute periodically from one district to another in order that one and all may cover each district and the entire system in a given period. All districts do not afford similar or equal opportunities and no one should be allowed to work continuously in either a good, poor or medium district, but all should have their turn in each.

The piece-worker, although not a tracer, a trouble-straightener or a worker fitted to operate in scattered districts, must be efficient and capable of discharging his duties in a competent manner and carrying to a satisfactory conclusion all work entrusted to his care. While he is quite within his rights in by-passing real difficulties and not spending his time in conducting long searches, etc., he must positively not be allowed to by-pass for trifling causes any of the work entrusted to him.

Giving Him Plenty to Do.

It is not desirable to limit the activities of a piece-worker with a view to securing work of a higher standard, as he cannot fairly be retained in service without sufficient work to keep him employed, and even if allowed to go off duty as soon as he has performed his limited task he will work just as hastily in order to get through and go off duty, and the employer's very object, viz., to cause him to move more slowly and perform work of a better quality, will be defeated; furthermore, the resultant limitation of his earning power is likely to cause the piece-work rating to go up. An energetic piece-worker with a large working capacity will earn "record" wages when supplied with unlimited work and will indirectly contribute to the maintenance of an economical and moderate piece-work rating. Furthermore, the employee who earns large wages will have every inclination to perform his work in accordance with instructions—his very interest in his position is the best guarantee to be wished for in this connection. A proper inside supervision over the work involved in the completion of by-passed jobs, as reported by the piece-worker from time to time, affords the employer a still further protection—this inside supervision is a most important feature of the piece-work system and must be exercised with constant vigilance.

Having now dealt with the economic aspects of the piece-work system it may be of interest to briefly outline its operation in our company as applied to

Meter Readers,
Billers,
Delivery Men,
Collectors.

We supply "Dual Service" (Gas and Electricity) and issue part of our bills on a bi-monthly basis and part on a monthly basis. The ordinary gas and electric lighting consumers are billed bi-monthly, while the larger consumers and all electric power users are billed monthly. Our territory is divided into meter reading district and the work distributed in accordance with schedules, so that the readings repeat themselves on about an even calendar date in each district. Twenty-two men take care of our meter reading on a piece rating per meter. These men work five days per week on regular readings; every Saturday morning is devoted to each man "picking up" the readings which he has by-passed for various reasons during the current week—this "picking-up" work is done at the regular rating for current readings. After the completion of this "picking up" the residue of by-passed readings reported to the office represents only

such cases as present unusual obstacles. The fact that each meter reader must appropriate a certain amount of time to "picking-up" his own by-passed readings is an added protection against by-passing for trifling causes. When reading meters in a district where the clientele is scattered the meter readers are paid an additional flat rate sum per district; this rate varies from 50 cents to $2.00 per meter book. A somewhat similar system is in vogue in connection with power and special clients billed monthly, as such customers are limited in number and distributed all over the system. In addition to the regular staff two special meter readers are also employed on a combined fixed salary and piece-work basis to take care of readings by-passed by the regular readers.

Other Piece-Work Jobs

The compilation of bills for gas and electric lighting is also done under a piece-work system. Two different ratings prevail applicable to the bi-monthly and monthly special bills respectively. A staff of twelve clerks is engaged on this work. Power bills, owing to the intricate nature of the work involved, are issued by straight salaried clerks.

Six men, paid exclusively on a piece-work basis, are engaged in the delivery of bills and collection notices. Two different ratings prevail applicable to dense and semi-dense districts respectively. In districts where the clientele is scattered the postal service is resorted to.

Nine collectors, working on a commission basis, take care of the collection of arrears respecting our bi-monthly system. When instructed to call at a given address it is the duty of the collector to either collect the full amount of arrears or cut off the service when directed to do so, but in cases where the client has moved from the premises the collector is not required to do any tracing work. The collection of arrears due by special clients billed monthly, as also tracing work, is attended to exclusively by mounted collectors paid on a monthly salary basis. The rating for commission collectors is based on the quantity of service "C.O.N.P." and the coupons collected, and is differential respecting the collections of "gross," "net" or "under one dollar" amounts, as is known as the "coupon system"—unlimited earnings. In the calculation of our collectors' remuneration we have recently introduced a new element in the form of a percentage allowance on discounts collected, with a limitation as to the maximum amount of wages to be earned thereunder. This system is known as the "discount system" and is only applied when it proves more profitable to the collector than the "coupon system." The two systems never apply simultaneously to the same collector in any one pay-roll period.

The piece-work system, as applied to certain specific routine operations, is a happy innovation, it is most effective and economical, and insures a steady output—it is a modern stabilizer.

Gas House Heating Cheaper Than Coal

H. Stansfield-Dodd Describes Operation of Dodd Heating System Before Canadian Gas Association Convention

Realizing that boiler and furnaces of practically all designs were inefficient in the combustion of their fuels, and the flue losses were high, I thought it worth while to attempt to design something which would have to be original if I was to overcome these difficulties, declared H. Stansfield-Dodd, in a paper presented at the recent Canadian Gas Association convention.

This would also necessitate breaking away from the usual atmospheric methods used in the combustion of fuels. I have personally investigated many types of heating apparatus, including the electrical branch, whilst in some cases high efficiency is obtained, but they are not economical for house heating, with the ruling prices for current, and the electro-chemical action has not been overcome yet, which increases the maintenance charge, and makes it commercially impractical.

Internal Combustion Engine the Inspiration

Several years ago the internal combustion engine attracted my attention, and I thought that if I could maintain, continuously, such combustion in a sealed chamber, a very high efficient flame temperature could be obtained, but the flue temperature would necessarily be high, so when designing this boiler I provided a combustion chamber at the top of same.

Small tubes of suitable metal are expanded into the top and are connected to the bottom of the secondary chamber in the same manner. These tubes are surrounded by larger tubes which are expanded into tube plates thus making a tube within a tube. The coefficiency of expansion of these tubes is equal, therefore producing no strain. The secondary chamber is provided with a flue at the bottom, having a packing glans which allows of the heater element to be free, is self-centering, and most important of all is free to expand and contract, thus preventing any undue strain on any of its members. This is a very necessary qualification, especially with varying temperatures as found in the operation of this class of apparatus.

Heater Element Surrounded by Water

The heater element, as you will notice, is surrounded by water, except where the burner opening at the top is situated, and the flue at the bottom. By this means the water picks up all the B.t.u.'s that are transmitted to the heating surface.

An automatic valve of special design is supplied, using a fluid seal, the action of which is infallible. The gas pressure is taken care of by a sensitive governor of our own design. One of the principal features in the operation of the appliance is the fan, which I prefer to connect direct to an electrical motor ⅛-horsepower size, actual 1-10, which is quite sufficient for our purpose. This motor is controlled by the thermostat, which has a clock resetting device. The thermostat operates a magnetic switch, which puts the motor in high or low speed, as required. This is done by simply placing more or less resistance in the circuit.

Now, having explained the various functions of the different parts, I will try and make plain the operation of the equipment. First, we will start by lighting the pilot. To do this we open the observation door and having ignited the pilot, insert the electrical plug or close switch which starts the motor. The thermostat is then set to the desired temperature, and the motor steps into the high speed. The fan then produces a suction or vacuum on the combustion chamber and all the pipes connected thereto, while at the same time it sucks up the diaphragm of the automatic valve, and in so doing raises a weight which allows the fluid to take the place that it occupied, thus uncovering the gas outlets, allowing the gas to enter the mixing chamber. An explosive mixture

is then drawn up to the burner, and in its passage is preheated by the burnt gases, and the hot water. Combustion takes place about 1-16 in. from the face of the burner. The flame and burnt products are then drawn down between the small and large tubes to the secondary chamber, and finally to the fan, where it is discharged into the flue; the water returning to the bottom gets the last of the heat. It will be noticed that the point of discharge of the water receives the greatest heat. The conditions are just the reverse to the ordinary furnace with the fire at the bottom. We will now presume that the house has reached its temperature, the thermostat operates the automatic switch, which throws the motor into low speed, the vacuum is then decreased to such a point where the diaphragm falls and the weight attached descends and displaces the fluid, thus covering the gas outlets and shutting off the supply, but leaving the pilot burning for the succeeding operation. This cycle of operation continues during the heating season.

Condensation from the gases have been taken care of by specially designed chemicals made of suitable materials, traps being used and connected to the drain.

A house, exposed on all sides, was heated during the season at constant temperature of 70 degrees, done at a cost for the season of six months for $201.30. The house used formerly 16 tons of coal for the same period, which, say at $10.00, equals $160.00, plus furnace man six months $90.00, totaling $250.00, which leaves approximately $49.00 in favor of the gas. I may say that the owner is more than pleased.

Lignite Gas Under Favorable Conditions Promises to Satisfy Reasonable Requirements at a Much Lower Cost Provided Calorific Standard Is Suitable

R. O. Wynne-Roberts Urges Efforts to Supply Cheaper Gas Despite Rising Costs of Labor and Materials

The principal topic of our day is the persistently increasing cost of labor and material, and the outlook is not encouraging. This condition calls for the best talents and efforts of engineers and scientists generally to evolve means by which commercial and social requirements may best be satisfied. The prospects for a return to former costs is remote. The demand for materials and transportation is often difficult, if not impossible, to meet. The disturbances caused by the war have been tremendous in all lines of business, and in all countries, but there is one redeeming feature of the war—namely, the change in our conception of public duties. Conservation of all things is now the dominant note, and to accomplish it means the application of research, thought and energy to make the best possible use, at the least possible cost, of our national resources, declared R. O. Wynne-Roberts, in a paper presented at the recent annual convention of the Canadian Gas Association.

Practical Calorific Standard the Answer

The cost of coal and oil is increasing, wages are on the up-grade, and as a consequence the price of gas must be raised. But it is of national importance that efforts should be encouraged by the Government to supply cheaper gas, and that may be accomplished by reducing the standard calorific value of town gas. The Governments advocate conservation. They might lead public opinion by arguing the utilization of cheaper materials for the manufacture of gas. Furthermore it may be contended that if a lower calorific standard was permitted, it would be possible in some parts of Canada to use peat, lignite and bituminous coals which are not now carbonized.

The Provincial Government of Saskatchewan in 1912 asked me to investigate the possibilities of developing power on the Western lignite fields, and I presented my report, a copy of which may be obtained at Regina. In that report I presented information on various phases of power development, and referred to the possibility of manufacturing lignite gas, by practically the same process as city gas is produced.

It would be taking too much of your time to quote my remarks, but I may state certain particulars of the experiments made at Austin (Texas), Ann Arbor (Mich.), Hebron (Dakota), in connection with the distillation of lignites. Suffice it to mention the following results:

	Gas Make per Pound of Lignite	Calorific Value per Cubic Foot
Austin	3.6 cu. ft.	580 B.t.u.
Ann Arbor	7.0 cu. ft.	460 B.t.u.
Hebron	4.0 cu. ft.	402 B.t.u.

The following is a tabulation of the analyses of the gases—per cent:

	Ann Arbor	Hebron
Carbon dioxide	7.6	12.77
Illuminants	4.9	2.52
Oxygen	0.2	1.32
Carbon monoxide	14.4	18.73
Methane	29.0	15.44
Ethane	..	0.52
Hydrogen	40.2	43.96
Nitrogen	3.7	5.04

It should be stated that the Ann Arbor experiments were made by Prof. A. H. White and Mr. Perry Barker, under actual gas works conditions, whilst Dean Babcock conducted those at Hebron by means of a small installation. Prof. Babcock found that the maximum production of gas from lignite was at a temperature of 1,200 to 1,400 deg. Fahr.

Peat and Wood Waste

The manufacture of lignite gas made under favorable conditions promises to satisfy reasonable requirements at a much lower cost, provided the standard calorific value is suitable.

Gas can be obtained by the carbonization of peat and wood waste. Large beds of peat are lying fallow waiting for utilization. Great quantities of wood waste are being consumed by fire or used to reclaim land. It seems reasonable that these should be conserved for public use. Bituminous and semi-bituminous coal, which is not now employed in the manufacture of gas, might be so used.

At the present time all coal and oil required for city gas production is imported from the United States, and we are officially warned that these are becoming more difficult to obtain and more costly to purchase. Unfortunately Canada possesses few, if any, beds of gas coal. Consequently we are dependent upon our neighbors for a supply. This is a matter of vital importance to the nation and it may be contended that the Government might with prudence initiate a comprehensive series of

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As the Journal Views It

A Saner Viewpoint as to Thermal Standard

There is no more sense in having a certain B.t.u. standard for gas in Texas simply because the authorities in New York have established such a standard than there is in setting a price on pineapples in New York simply because such is the price in Havana, Cuba. Yet a study of the B.t.u. standards originally set throughout the land will reveal an astonishing degree of uniformity.

But we are veering towards a saner viewpoint. Regulatory commissions are manifesting a greater degree of independence in determining what in their opinion is the best gas for their particular territory.

There is almost universal acceptance—though generally a passive acceptance—that the best gas is the gas that for the dollar spent returns the greatest degree of service to the consumer.

When commissions really take this dictum to themselves, when they actually get down to finding out which standard fits this bill instead of merely copying someone else's opinion on it, we are going to see some fine tumbling of heat unit standards. And we're going to see some strange basic materials introduced.

In one section we'll see lignite used, in another perhaps oil shales, in still another perhaps wood. Somehow we rather look forward to the day. It's going to add zest and interest to the business of making gas.

Superintendents are not then going to be able to confine themselves to one or two narrow grooves of study

yet be able to find places in practically any section of the country at will. If they desire to retain their present independence of location they'll have to become real men of science and broad understanding. And in our viewpoint no one desires such a condition more than do our superintendents.

Following in a groove is an easy road to travel. It doesn't require an extensive supply of brains or study. Because of this men of real ability as superintendents have had to be content with a by no means high standard of compensation. There has always been a too plentiful supply of the mediocre type to step into their places if they chose to step out.

And the effect will carry over even to the commercial men. Cheap gas means wider opportunities of application. With each locality enabled by a suitable heat unit standard that will enable it to use a closely available raw material and a wider choice of process of manufacture cheap gas becomes not merely a possibility but an actuality.

It is no lack of ability or comprehension that is holding back the gas industry from the days that are inevitably ahead. It is lack of real enlightenment on the part of those who in theory, at least, have the interests of the public in their hands. When they catch up the gas industry will go ahead. And its prosperity and the prosperity of the personnel within its ranks, will be one of the greatest boons that have ever come to the American people of the present day and of the future.

Apparently Some Consumers Are Able to See Light

Of course it has always been evident that the extension of a gas main into a new territory is of considerably greater benefit to property values in that territory than it will be for many years to come to the revenue of the gas company. But in the old easy days we did not waste much effort in bringing this fact home to other minds.

Lately a few of us have. Realty promoters were amazed at the audacity of it. They benefited! What complete gluttons these gas companies are after all, with their ceaseless vigilance as to new means of fattening their pocketbooks and their ready opportunism at grasping at every contemporaneous excuse.

In this week's issue we publish a rather remarkable news item. Here we have a token that people vitally interested, people who own property in a territory not supplied with gas, realize and appreciate the relation of a gas supply to people's desire to reside there.

Their testimony would indicate that even the absence of a sewer system does not hold back immigration to the degree lack of gas supply does. People will not balk inflexibly at a cesspool. But they will at the heat and dirt of solid fuel cooking. Even lack of paved streets seems a matter of secondary importance.

Verily the world is coming to a degree of understanding. It is not even beyond the realms of possibility—we do not promise it but venture only to suggest—that a couple of generations hence the gas man may be actually esteemed and popular as a useful public servant.

Lignite Gas Under Favorable Conditions Promises to Satisfy Reasonable Requirements at a Much Lower Cost Provided Calorific Standard Is Suitable

(*Continued from page* 166.)

experiments to ascertain the best manner of utilizing local resources for the production and combustion of city gas. Such an undertaking would stamp their behests for conservation with a note of sincerity. And if there ever was a time to lead the public in the art of conserving national resources, it is doubtful if a more propitious one could be found. One of the lessons of the recent titanic war is that of conservation. This carries with it the problem of how to reduce the cost of production.

Mr. Arthur Hewitt stated last year that if the thermal value of gas was reduced, it would effect a saving in Canada of not less than 100,000 tons of coal, and a very large quantity of gas oil.

The Canadian Gas Association has frequently discussed matters relating to the calorific standard, and has induced the Government to make certain changes. The time has arrived for a more pronounced relaxation of the Government requirements. This was acknowledged in other countries during the period of the war, and persistent efforts are being made to revise the conditions for days of peace. It will be known to you that the British Government has before it a recommendation of a strong Fuel Research Board to permit gas undertaking to declare the calorific value of the gas it intends to deliver, and further, that such undertakings may be free from sulphureted hydrogen and not containing more than 12 per cent of inert constituents. The limit suggested by the above board is from 400 to 500 B.t.u. There are certain stipulations imposed, but these are incidental to the adoption of a new standard.

The British House of Commons Parliamentary Bill Committee recently adopted a limit of 400 B.t.u. for gas to be supplied from a coke-oven plant at Stockbridge.

The urgency for a revision of these lines in Canada is, I think, self-evident and needs no argument to justify its adoption, especially having regard to the peculiar conditions in this country with respect to the sources of supply of gas coal and gas oil, and to their increasing cost.

No Reason Why Thermal Standard Should Become Stereotyped Throughout the Land

It has been proposed by the British Fuel Research Board that the consumer be charged for the actual thermal units supplied to him in the gas which passes through his meter. It may be further suggested that the gas undertakings be allowed to pay increasing dividends as the price per million heat units is reduced. This condition would be a strong incentive to efficiency, ingenuity and profound research. No imputations are implied that these qualities are non-existent to-day, but the present practice in the manufacture of city gas tends to become uniform, because the requirements are uniform, and there is not the same inducement for departures as would be the case if gas engineers were permitted to adopt the standard best suited to the local resources. There is no particular reason why the thermal quality

of gas should be stereotyped throughout the land than that the hardness or softness of water should be specified or that building materials should be standardized. The strict uniformity of the thermal value of gas is perhaps a relic of other days when the public was less informed and the industry was in its infancy.

The conservation of local fuels for the use of Canadian people is a matter of prime importance, and I venture to predict that if the regulation was made more flexible, it would soon be found that gas engineers would find a means of producing cheaper gas, which would be economical for a more generous use—both domestic and industrial. It would, doubtless, be a source of pride and gratification to the Canadian Gas Engineering Organization if it was permitted and assisted by the Government to lead the way in the manufacture of cheaper gas. The high cost of almost everything that is essential for the sustenance of life, both directly and indirectly, must tend either to general commercial inertia or to financial stringency, unless means are evolved to reorganize our methods of manufacture. This apart from the great question of the mutual relations of labor and capital.

No Reason Why Quality in Installations Should Be Sacrificed in Securing Co-operation of Plumbers in Increasing Use of Gas

E. M. Paterson Bases Argument for Efforts to Secure Goodwill of Plumbers and Dealers on Premises that Merchandising Appliances on Gas Company's Part Is at Best a Necessary Evil

It will be acknowledged by all members of the gas industry that the chief object of any possible co-operation with the plumbers, manufacturers and dealers must be that of furthering the industry by popularizing the use of gas for domestic and industrial purposes, declared E. M. Paterson in a paper presented before the recent annual convention of the Canadian Gas Association. Needless to say, the consumer is the final judge as to whether such co-operation is a success, therefore the question will have to be studied not only from the point of view of the gas companies, the plumbers, manufacturers and dealers, but also from that of the consumer.

Why We Are in Business

The company members of this association will all agree that they are in business to manufacture or produce gas and sell their product to the public. The piping of buildings and the sale and installation of appliances are more or less a secondary object or a means to an end. No doubt commercial or new-business department men may in some instances think differently, but the fact remains that their end of the industry is and always will be what might almost be termed a necessary evil. Possibly this is a rather rough way of handling these sections, but I am anxious to make this point clear in order to pave the way for what is to come.

In order to make my statement clear, let me illustrate it in the following way: Two gas ranges identically alike in every respect, "Ideal Cabinet Ranges," manufactured by the same firm, one of which finds its way to the gas company showroom and is eventually installed by their fitters in a consumer's kitchen, replacing a cold range. The other is sold by the manufacturer to a dealer, who installs it in a customer's kitchen, also replacing a coal range. Both ranges are installed in an ideal manner, the piping being O. K. and the vent, etc., in proper order. From the date of installation both these ranges are consuming the company's product, one having possibly brought in a small margin of profit to the company and a certain number of attendant overhead charges, the other having been installed without any commercial effort of the company. I contend that from the time of installation both of these ranges are of equal value to the gas company; both might be termed, in a sense, "assets" of the gas company. The dealer has accomplished identically the same transaction as the commercial department, and with the same result—"the consumption of gas" in an ideal gas range properly installed. This contention maybe appears somewhat peculiar, coming from a representative of the Consumers' Gas Company commercial department; but from the day I broke into the gas game, not so very long ago, I have always tried to look at new business from the broad standpoint of the gas company as a whole, and not from the perhaps somewhat narrowed view of the appliance salesman, and it is to this method of reasoning that I give the credit for any success that I have met with.

Now to proceed with my thoughts and experiences on co-operation. Seeing that the plumbers are the first in the field, in so far as their end of the business is to pipe the buildings for gas (at least, this is the part that we would like to know they were doing), I will deal with them first.

A Thankless Task

Early in the year 1915 I was instructed to call on all the master plumbers of the city of Toronto with the object of arousing their latent interest in the gas business generally, and if possible to enthuse them individually to the point of advising their clients as to the necessity for gas piping in all buildings. I started out on this task prepared for a regular joy ride, but, if I remember rightly, I was undeceived at the very first call I made. The plumber I called on as my initial victim apparently thought my visit was in the nature of a joke, and proceeded to tear the gas company to pieces, from the board of directors downward, and, incidentally, informed me that the gas industry, as far as Toronto was concerned, was "dead" and the funeral procession was due to start. This was indeed a rude jolt; but I managed to get a word in when he stopped to regain his breath, and left him with something to think about. I learnt afterward that he spent the next half-hour phoning to his special cronies in the plumbing profession asking them as to what they thought my visit portended and advising them to lock the safe at the first sign of a gas company business card, as anybody who worked for such notorious robbers needed watching.

I called on several others on the same day, mostly with the same result, having to listen to all sorts of tirades, but could not get anyone to quote any specific occasion on which they had suffered at the hands of the gas company. The general charge was that the prices charged for piping and fitting by the Con-

sumers' Gas Company were calculated to put any self-respecting plumber out of business.

I reported the result of my first day's calls and suggested that I should next try my powers on the heads of the local plumbers' association, thinking that I might possibly find the root of the trouble, real or imaginary, more quickly. This suggestion was agreed to, and I started off again, making my first call on the secretary of the master plumbers' association; and I discovered a bright light. From this gentleman I obtained quite a lot of information, without receiving any abuse, and also a guarded promise of his co-operation. I learnt that the doings of the gas company had been the subject of a good many discussions at the local meetings in times gone by, and that since the coming of the hydroelectric system, which had to some extent displaced gas as a lighting medium, they had decided that it was not necessary to worry any more about gas piping and had found other subjects to discuss and vent their wrath on.

I pointed out to him that, although the electric interests had made some inroads on the company's lighting business, the consumption of gas had gone ahead by leaps and bounds; that as a fuel medium it had greatly gained in favor, and that if the apparently slight differences between the gas company and the local plumbing fraternity could be overcome there was an ever-increasing business which the plumbers could share in with profit.

I afterward interviewed the other officers of the association, and eventually was permitted to speak to the members at one of their regular meetings. My reception was somewhat mixed from "fair to warm," with an occasional cool breeze; but I left the meeting with the impression that co-operation with the plumbers was not only possible but that such a step would be of mutual benefit.

At the meeting referred to the subject of standardizing prices on gas appliances was discussed, and a particular type of tank heater was chosen as a suitable starting point. Following the meeting the Consumers' Gas Company advertised the heater in the local papers, mentioning that it could be purchased from the plumbers or from the company at the same price. I also wrote several short articles for the *Sanitary and Heating Engineer*, with the object of fostering the spirit of co-operation.

Unfortunately, the conditions in the early days of the war were not calculated to create any great enthusiasm in business circles, the building trade was stagnant, and a general feeling of pessimism prevailed. However, in the fall of 1915 the military authorities, at my instigation, decided to use gas for cooking and water heating, and the installation and maintenance of the necessary appliances claimed practically the whole of my attention, with the result that the co-operative movement has been permitted to lie dormant until the present time.

A Good Effect Upon Plumbers

The military business turned out to be of large proportions, and this made certain of the plumbers envious. The consequence was that I received a number of suggestions that it would be a very gracious act upon the part of the gas company, and also a direct evidence of their good faith, if they were to hand the installation of military equipment over to the plumbers working in the immediate neighborhood of the buildings concerned. But I could not see it in that light. Although several plumbing firms had been engaged by the military authorities to install sanitary equipment in the various barracks and hospitals, not one of them had taken the opportunity to suggest the advisability of using gas for any one of its many uses, and I thought that the lesson that the plumbing fraternity was receiving, while watching the miles of pipe that the Consumers' Gas Company was installing, might bear good fruit in the future, and I really believe that it has borne fruit.

The vast amount of piping installed in munition factories during the war by the industrial department has also had its effects on the plumbing mind; they have certainly been shown that the gas business is not dead. Moreover, the coal and labor situation has caused the public to seek other means of auxiliary heating, and radiant gas fires have proven their worth. The improvement of this type of fire over the old asbestos grate and gas log has been an education to the plumber. The public are demanding that their fireplaces be piped for gas, and the plumber can see that it will no longer be necessary to throw the gas piping (from the meter to kitchen range) in with the sanitary installation, but that a separate and distinct item will be added to the specifications—"pipe for range water heater, gas fires, etc., etc."—an item which will be a little too big to be thrown in as an inducement to the builder to place the order, but a profit-bearing branch of the installation.

Now, as to what steps are necessary to bring about a desirable co-operative standing with the plumbers, these, of course, must vary somewhat according to local conditions; but, in my opinion, the following points would bear discussion:

1. The elimination from the mind of the plumbing fraternity that their help is not wanted and that the gas companies prefer to do all the gas piping, but that if they are willing as a body to take an active interest in the gas business they will find the gas companies anxious to help and co-operate with them. On the other hand, it must be distinctly pointed out that the gas industry is going ahead, whether the plumbers do their share of the piping and installing of appliances or not; that no half-measures will do—either the plumbers go out after the gas-piping business or the gas companies must in order to secure the consumption of their product in such quantities as their own energies and conditions warrant.

2. The education of the plumbers as to correct and adequate gas piping, in conjunction with safe, economical, efficient appliances and the absolute necessity of flue connection.

3. The encouragement of the plumbers to become merchants and to take full advantage of their opportunities to sell gas appliances. Persuade them to make their show windows attractive and a source of trade increase, and therefore profit.

4. The regulation of prices and charges, not with the object of increasing them but with the idea of seeing that all concerned—the fitter, the plumber and the gas company—receive adequate payment for work performed and that the consumer receive just and fair consideration at all times.

5. Trade discounts to plumbers purchasing appliances, etc., from the gas companies.

6. In case of payment by the consumer for appliances by instalments, the possibility of anything being done for the plumber introducing the prospect.

Now as to manufacturers, I have had very little actual experience as to possibilities of co-operation with these gentlemen, but what I have had tells me that those selling to the gas company are willing to co-operate, but the others are not at all anxious, preferring to swing on their own gate. Apparently it is a hard matter to make the manufacturer understand that the gas companies cannot undertake to sell every manufacturer's appliances. They, of course, all consider that theirs are the best, and that gas companies not merchandising their particular line show poor judgment.

But even with this huge obstacle to overcome, I think that co-operation with manufacturers is desirable. The gas companies have unique opportunities for finding out both the strong and weak points of appliances. Their employees are in constant touch with the users of the appliances. Often enough the gas company gets the blame for something that is really a fault in the appliance. This in itself is a delicate matter to handle and calls for a good deal of diplomacy in handling.

At the present time there are no official regulations governing either gas piping or appliances, and in order that all appliances shall be built on safe, sane and efficient lines it is necessary that some sort of co-operative plan be formed.

Perhaps it would be possible to form a committee of this association to lay down a few rules governing each type of appliance and officially approving of all appliances conforming with these rules, the manufacturer to be permitted to make use of this approval in his advertising. To do this it would, of course, be necessary to form a manufacturers' and dealers' section of this association in order to give them representation on such a committee.

I feel sure that were this association to get into closer touch with manufacturers of appliances, mutual benefit would be the result.

The standardizing of the essential points in a particular gas appliance would not necessarily rob that appliance of its individuality. Each manufacturer could still embellish it with certain features peculiar to his own taste and the particular grade of trade that he was catering to.

Some Appliances Positively Dangerous

Should such suggested co-operation ever become general, it would be quite in order to say that all makes of gas appliances were good, although some might be better than others. At the present time this cannot be said to be the case; some makes of appliances are not only not worthy of the adjective "good" but might be termed "near" dangerous.

In addition to this the public would purchase the gas appliance with more confidence, knowing that it was built to conform with the standards set by a responsible body of men who recognize the necessity of protecting the interests of their clients as being one of the foundations of their industry.

Last but not least, the dealers are to be considered, and it is with these gentlemen that my own efforts toward co-operation have met with the most success.

In the springtime of the years 1915, 1916 and 1917 I organized the gas range week campaign in Toronto, and with very few exceptions found the dealers willing to co-operate with the gas company.

Even the large departmental stores joined in the campaign and helped materially toward its success.

In this connection I cannot do better than read the report which I made to the N. C. G. A. at the close of the gas range week campaign in the year 1916, which was published in the bulletin of that association:

"The gigantic success of gas range week, 1915, in Toronto was greatly overshadowed by the results obtained in the campaign of 1916.

"Approximately 1,620 gas ranges have been disposed of by the Consumers' Gas Company and the various dealers who co-operated with them in their efforts to make gas range week, 1916, the success it has proved.

"This is truly a noble record and lasting credit to everyone concerned.

"Needless to say, the result was not obtained by individual effort but by enthusiastic co-operation. Not only the Consumers' Gas Company but every dealer, the huge departmental stores, the housefurnishing companies and the hardware and range dealers all concentrated their efforts to boost gas range week and to promote the use of gas cooking.

"One could not pick up any Toronto newspaper without being informed on almost every page that gas range week, 1916, had arrived, with its special inducements to those householders not already cooking with gas. Every store advertised its own special make of gas range, pointing out in its own particular way the desirability of cooking by gas with this range, and the advertisements made good reading. The reader was confronted with cuts of all kinds of gas ranges, from the humble 'cooker' to the 'queenly white enamel cabinet range.' The housewives' eyes were made to glisten as they read the various descriptions and capabilities of gas ranges. It must have been a difficult matter to decide which make of gas range to buy, they all looked so neat and clean, so businesslike and capable, and all foretold the same tale of a cooler, cleaner, healthier kitchen, combined with less work, less worry, less waste of fuel and time, and a happier and brighter household. No wonder the buyers were perplexed as to which way to decide. There was only one point definitely decided upon, and that was a gas range was needed, with the accent on the 'gas.' All other factors in the purchase were controlled by the pocketbook and the influence of the salesman's statements regarding his special make of range.

"Other methods of publicity besides newspaper advertising were adopted. Every few blocks large posters were displayed pointing out the beauties of various makes of gas ranges, or inviting the public to see the 'special displays at all dealers' during gas range week, 1916. The Consumers' Gas Company's and dealers' rigs displayed cards bearing the words, 'Gas Range Week, 1916.' The show windows of the various stores were also placarded with the same words, all of black letters on a white ground, with the capitals lined with aluminum—the nearest ap-

proach to gas range colors obtainable. All of the dealers made special displays, both in their windows and in their showrooms, during the campaign. Some of the more enterprising made a special feature of an 'all-gas kitchen,' and gave demonstrations of cooking by gas.

"Another method of publicity was the gas range week free guessing contest, prizes to the value of over $200 being awarded. Toronto being essentially interested in military affairs these days, a military subject was chosen: 'How many men will enlist in Toronto regiments during the week of May 7 to May 13, both days inclusive?'

"Coupons were distributed by all the dealers and thousands of guesses were recorded. Great enthusiasm was evident on the part of the contestants, especially after the competition closed and the judges' awards were awaited. The winner of the first prize, who was the only person to record the actual number, 428, received a handsome 'Gurney Oxford' gas range, valued at $50. Needless to say, this welcome addition to the kitchen was greatly appreciated by the winner and his family. Altogether twelve prizes were awarded, consisting of four gas ranges, two gas water heaters and six gas iron or lighting fixtures.

"One very pleasing result of the campaign, which will no doubt have far-reaching results, is the large percentage of sales of cabinet ranges as compared with the percentage of sales of the old-type range.

"The manager of the gas appliance department of one well-known firm informed the writer that they had sold more cabinet gas ranges during gas range week than they had sold in any one month in previous years.

"If the gas range week is any criterion, 1916 is going to be a 'banner' year for the gas business in Toronto.

"Nothing but satisfaction is expressed by the dealers at the result of the campaign, both individually and collectively. Co-operation has cemented the friendship between them and the gas company. Already plans are under way leading to further co-operation, which will tend to bring more business to both parties and cleaner, happier and more punctual homes for the citizens of Toronto.

"Although gas range week, 1916, has come and gone, the pleasant memory of the more than splendid results of co-operation between the gas range dealers and the Consumers' Gas Company will not depart for many a day."

Can the Dealer be Depended Upon to Market Good Appliances

The manufacturers will tell you that the gas companies as a rule market a better class appliance than the dealer does; that the latter looks only to his profit and not to efficiency of the appliance. In some cases, no doubt, this is the truth; but there are many dealers who pride themselves on the quality of the goods they sell, and I think that active co-operation with the gas companies would tend to make this class more numerous. The public to-day are a little more inquisitive when purchasing gas appliances than they used to be, and look a little further than the amount of the initial outlay. Some months ago, while traveling on the street railway, I stood near to some ladies who were talking together when I heard the word "gas" mentioned. This attracted my attention and I gathered that the speaker was advising her friend not to purchase a certain make of gas range, as Mrs. So and So has one and her gas bills are outrageous. The particular range mentioned was of the biscuit-box order, and it is quite likely that the lady speaking had discovered the reason for the high gas bills.

In this connection, the one complaint which was really serious that I received from the dealers during my calls was that of gas company salesmen running down or "knocking" appliances marketed by the dealers. No doubt the fault was not all on the one side, but it was a bad blow for co-operation. To ask the dealer for his co-operation to install more and better gas appliances, and to learn that salesmen on the gas company's staff were suggesting to prospective customers that a certain dealer's goods were not reliable, was not exactly pleasant. If co-operation with the dealers and others is to ever become an accomplished fact, this sort of thing will have to be nipped in the bud. Knocking a competitor's goods is the last action a good salesman would take when talking to a prospective purchaser, no matter how much room there was for the "knocking," and gas company salesmen will have to "play the game."

Mention has been made at a previous convention of this association of the advisability of selling neutral articles as an aid to meet overhead expenses. In my opinion this would be a death blow to any serious attempt at co-operation. Commercial managers would be better advised to eliminate all articles not directly connected with the gas industry from their catalogue. Personally I would suggest refusing to sell any article that did not actually have a gas burner or was not a part of a gas applince or gas fixture. It seems to me it would be a great mistake to antagonize the dealers and departmental stores by entering into competition with other lines than what could be called legitimate gas business. Moreover, we claim that there are more than 1,000 uses for gas, and if we enter other fields in order to find sufficient trade to warrant our keeping store it will probably be suggested that our proud boast is an idle one. Gas companies are, as a rule, very dignified corporations, and it would not add to their dignity to compete with general stores promiscuously.

Co-operation with the dealers with the avowed object of increasing the consumption of gas by the sale of approved gas appliances should meet with success such as all good objects deserve to meet with.

To finish this conglomeration of experiences and suggestions, I would like to remind the members of this association that the gas industry has been permitted to play an honorable and important part during the late world war, during which it has to some extent "come into its own." Wisdom tells us to consolidate the position so won. How can this be done? Will efforts toward co-operation with the plumbers, manufacturers and dealers be of assistance in this respect?

Should these efforts be made and general co-operation result, the gas industry of Canada will have enrolled some additional thousands of boosters and

salesmen, all bent on further popularing the use of gas for domestic and industrial purposes by the sale of economical, efficient and safe gas appliances.

The Domestic Science School as a Sales Producer

John E. Philpott Shows that While Start Is Hard Later Business Comes Almost Without Effort

The advantage of the Domestic Science School as it is taught in these institutions to-day from an advertising point is far greater than even the average gas man realizes, as the children, and especially the girls, talk over in their homes the daily school happenings and particularly the study of cooking as taught in the Household Science departments of the schools and colleges, declared John E. Philpott, in a paper before the recent annual convention of the Canadian Gas Association. The parents are told of their cooking successes and immediately become interested. Very often the girl is instrumental in changing the home kitchen over from coal or wood to gas, and as the greater number of school rooms are also equipped with automatic gas water heaters, many a good prospect for the gas company can be directly traced to this source.

Getting a Start Hard

Quite a number of installations along this line have been made in Toronto, and as they have proven satisfactory, perhaps some of you would be interested in hearing what our experiences have been. At the beginning of our activities along this line we had to meet the members of the Board of Education and talk the matter over with it, and I might say that our board was not easily convinced, but we secured consent to install a Domestic Science equipment in one of the schools for 24 pupils. This installation was made on a six months' trial, and if at the expiration of that time the appliances were found to be in any way unsatisfactory they were to be taken out without any cost to the Board of Education. Well, we did not have to take them out, as the equipment was satisfactory in every way, and has since been the means of our getting a number of other installations. We are glad to say that teachers and pupils alike are pleased with the equipment installed by our company. It was hard work getting started, but now the business comes of itself.

Good Equipment Essential

It is essential that good equipment be supplied, and that it be properly installed and adjusted. Afterwards it must be kept in the best of condition. We usually sell 12 ovens for each set of 24 Domestic Science stoves, and these are used for baking. This means competition among the pupils, and in turn added interest. I might say that the cost of such equipment is small in comparison to the results obtained.

We will now pass on to a new field that is becoming more important every day. I refer to the large mercantile and factory kitchen and cafeteria, where food is prepared and supplied to employees. We have already made a number of fine installations of this character, and are getting inquiries almost every week regarding this particular line of our work. The employer of all kinds of labor to-day is looking for greater production, and this of course means higher efficiency which can only by obtained by the proper environment and by more pleasant surroundings. Good food properly cooked and nicely served, helps a whole lot to obtain these results, and this business means a good gas consumption, in addition to the sale of gas ranges, bake ovens, coffee urns, gas fired steam tables, warming ovens, cake griddles, broilers, hot plates and other appliances. The average salesman with initiative can convince the employer of labor of the advantages to be gained by putting in the employees' restaurant. Then there are the Hospitals and Institutions to be considered, particularly those that occupy old buildings. It has been our experience, where we have received complaint, that by going over the piping and making a thorough survey of the building, we have been able to recommend changes that have given greater efficiency to our customers, and this has been the means of our securing not only some nice piping orders, but also orders for appliances as well. I might add that it is our policy to install only the equipment that we believe is suitable for the requirements of the various institutions. We may occasionally lose a sale, but find in the end it pays to go after this business. and the salesman that is on the job can invariably bring his customer around to his point of view. Nor do we install gas burners in ranges and bake ovens that were made for coal. We know of a number of instances where this has been done, and it has not proved satisfactory to the customer, as it has invariably meant high gas bills. Hospitals are unusually large consumers of gas, and it is our intention to go after some of the sterilizer business, connected with these institutions, in the near future.

Opportunities in Colleges

The college and university residences and dining halls also present opportunities, and recently we made an installation in a students' residence, of five hotel ranges, two bake ovens, a broiler and a 20 horsepower gas-fired steam boiler to take care of the steam tables, coffee urns, and vegetable cookers. This steam boiler to be used only when the central steam plant is not in use.

We now pass on to the hotel and restaurant field. This, at the beginning of our efforts required a lot of hard work, particularly the installation which we secured in the leading hotel of our city. It was almost necessary for the salesman that secured this order to sleep on the doormat, but after a long patient fight his efforts were successful. This was not all, for after securing the order it was necessary for him to do almost the impossible before his ends were attained. This particular hotel wanted to use its coal ranges until 12 o'clock at night, and then we were to take them out, install the gas ranges in the same location where coal ranges had been, and have everything ready when cooks came on duty at six in the morning. We were able to do this and got in eight ranges, two salamanders and a gas broiler, and at 5 o'clock everything was installed ready for use. The other manager, chef and cooks were not only surprised, but pleased with the achievement. Since then, we have added two gas ranges to the battery, sold another broiler and oyster cooker, and at the time of writing this paper we are closing an order with this hotel for new equipment for their banquet kitchen. This hotel's gas consumption will be over 10 million cu. ft., or to be exact 10,176,800 ft. for the year. We have installed during the past year over 100 hotel units for restaurant, hotel and institution cooking. and feel that we have only scratched the surface. Our hotel department has only been in existence a little over two years, but feel that others can achieve proportionately as much as we have done.

Never Promising too Much

It is clearly up to the salesman to go out and get this business, and if he has the proper co-operation of his employers, and if he hustles and keeps everlastingly after it, fulfils every promise, never promising too much, showing his prospective customers that he wants to help them in getting greater efficiency, quicker service, a cleaner and cooler kitchen, no dirt, dust or ashes, no firemen to pay and feed, a quick fire always at hand, and many other advantages that gas has over every other fuel, he is bound to succeed. He should always keep in mind that his work is not finished with the signing of the order nor the installation of appliances. This is of course only beginning, for after that, he must instruct the cooks and chefs how to operate the appliances efficiently and economically; teach them how to read a meter and to take daily readings, and it is good business to also inform the proprietor or manager the importance of this so that he can know his daily fuel costs. By this means he can arrive at the cost of cooking every meal served. You will find that this will be appreciated and will have a tendency to stop the waste of gas. It will also go a long way in convincing the hotel man of your desire to be of assistance to him.

Total Outlay for Compensation for Accidents in Plant Employing 3,500 Men for Month $1.71

Extraordinary accomplishments in accident prevention are indicated in a report of accidents in the plant of the American Rolling Mill Company, Middleton, O., during the first five months of 1919 as compared to the corresponding period of 1918, submitted to the National Safety Council by R. G. Adair, safety engineer of the rolling mill company.

This report shows a reduction of 91.9 per cent in the total compensation paid by the company during the period mentioned, a reduction of 46 per cent in the total number of lost time accidents and a reduction of 51 per cent in the total days lost as the result of accidents.

Perhaps the most striking item in the tabulation is that showing a total outlay for compensation of accidents amount to $1.71 for the month of May, 1919, in a plant employing 3,500 men. The decrease in accidents shown in Mr. Adair's report is all the more significant in view of the fact that the 1918 figures, which are used as a basis of comparison, show a relatively low accident experience. A digest of the report follows:

	Five Months	
	1918	1919
Total compensation	$20,638.22	$1,340.26
Compensation per 100 men	412.76	38.29
Per cent of reduction—91.9.		
Total lost time accidents (days)	210	83
Lost time accidents per 100 men (days)	4.2	2.3
Per cent of reduction—46.		
Total days lost	2,523	868
Days lost per 100 men	50.4	24.8
Per cent of reduction—51.		

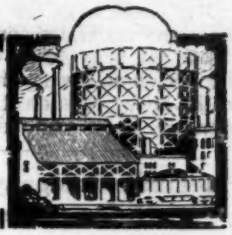
Coal, Petroleum and Gas Required in Immense Volumes for Production of Electric Power in United States

The production of the electric power in the United States required the combustion of fuels in the quantities indicated in the following table:

State	Coal (Short Tons)	Petroleum and Derivatives (Barrels)	Natural Gas (Thousands of Cu. Ft.)
Alabama	16,467	0	0
Arizona	6,160	88,011	0
Arkansas	11,177	489	85,398
California	0	185,127	181,785
Colorado	44,079	95	0
Connecticut	62,234	323	*12,615
Delaware	7,713	17	0
District of Columbia	20,483	0	0
Florida	5,594	199,149	151
Georgia	11,934	120	0
Idaho	111	10	0
Illinois	351,289	2,198	0
Indiana	157,896	167	2,108
Iowa	78,739	730	0
Kansas	51,932	60,233	85,996
Kentucky	39,386	351	0
Louisiana	14,560	29,419	47,458
Maine	348	7	0
Maryland	23,657	18	1,500
Massachusetts	143,453	14	0
Michigan	124,841	104	0
Minnesota	46,346	992	0
Mississippi	16,542	349	0
Missouri	90,495	19,580	0
Montana	5,686	563	960
Nebraska	32,984	3,349	0
Nevada	180	1,044	0
New Hampshire	3,696	20	0
New Jersey	116,525	103	0
New Mexico	4,438	1,360	0
New York	363,319	546	164,408
North Carolina	16,234	20	0
North Dakota	17,116	504	0
Ohio	321,987	842	†323,020
Oklahoma	13,153	5,594	440,094
Oregon	433	14,345	0
Pennsylvania	408,264	14	54,450
Rhode Island	22,024	0	0
South Carolina	9,540	33	0
South Dakota	12,325	3,463	0
Tennessee	28,724	84	0
Texas	34,789	181,318	179,760
Utah	61	0	0
Vermont	412	2	0
Virginia	22,475	13	0
Washington	3,473	18,804	0
West Virginia	70,717	58	142,688
Wisconsin	77,139	662	0
Wyoming	19,907	2,539	18,349
Total	2,931,037	822,783	1,740,740

*Artificial gas. †67,156 artificial gas.

NEWS OF THE GAS INDUSTRY



Possibilities of Manufactured Gas in Richmond, Ind.

Nimrod H. Johnson, general manager of the Richmond Light, Heat & Power Company, of Richmond, Ind., has been conferring with the officials of the Logan Gas & Fuel Company, from which Richmond obtains its natural gas, to determine whether or not natural gas will be used here next winter.

Mr. Johnson said that if there are prospects of a mild winter, natural gas will be used, providing the officials of the gas company feel that there will be sufficient supply. Otherwise the local company will manufacture gas.

Manufactured Gas Filters in as Natural Ebbs Out at Edwardsville

On Aug. 7, Edwardsville, Ind., began using artificial gas from the East St. Louis plant of the St. Clair County Gas & Electric Company. The supply was turned on at 8 o'clock in the morning from the Collinsville station, and gradually followed the natural supply, as the latter was exhausted.

A number of consumers had trouble with their stoves. A force of men made adjustments at the rate of 300 a day.

Cumberland Invites Propositions for Manufactured Gas

The committee which was appointed recently by the Board of Directors of the Cumberland, Maryland, Chamber of Commerce to compile a report of the gas company's business since the year 1914, has filed its report. It is an exhaustive one, showing the various amounts of gas used, the cost of operation, the amount purchased by the West Virginia and Maryland Gas Company for not only Cumberland, but for Frostburg, Eckhart, Borden Shaft, Mt. Savage, Midland, Lonaconing, Barton, Westport and Piedmont.

During the year 1914 there was sold in Cumberland, according to this report, for commercial use 1,415,604 cu. ft. of gas for which was paid $142,858.17 by the manufacturer. The consumption for domestic purposes during the same year amounted to 537,730 cu. ft., for which the gas company received $135,335. In 1915, 1,615,297 cu. ft. was used for domestic use. In 1916, 1,239,818 cu. ft. was used for commercial purposes and 561,138 cu. ft. for domestic use. In 1917, 117,244 cu. ft. of gas was consumed for commercial purposes while the domestic consumption was 432,718 cu. ft. The total gas sales in 1914 from commercial consumers in Cumberland was $144,363.91, and from domestic consumers $135,335.

The ctiy of Cumberland, Md., invites the world to submit propositions for supplying the city with manufactured gas.

Gas Fuel Division Increases Its Sales Force

Hardening Outfit Installed in Gary Steel Can Opener Company

The sales force of the Industrial Fuel Division of the Peoples Company of Chicago has recently added to its staff of sales engineers, twenty-one new men, all of the graduate sales engineers.

The aim of the department is to "saturate" the manufacturing field with gas for fuel. As a forecast of what is to come, the company reports that one of them, only two days "on the street," closed a contract for a complete hardening outfit, with the Gary Steel Can Opener Co., thus adding a new gas fuel consumer to the Industrial Division's list.

Want 12-Cent Raise at Newcastle

The Interstate Public Service Company, serving Newcastle, Ind., is seeking a 12-cent-per-thousand raise in rates from its territory.

The Interstate company purchases natural gas from the Logan Gas Company, which has raised the price to the same extent the local company seeks reimbursement from its patrons.

Rate Increase for Columbia, Mo.

The Missouri Public Service Commission decreed in a recent ruling that the Columbia, Mo., gas works can increase its rates from $1.35 a 1,000 to $1.65 a 1,000 for consumers of less than 10,000 cu. ft. a month and $1.25 to $1.55 a 1,000 for users of more than 10,000 ft. a month. A discount of 15 cents a 1,000 for prompt payment is recommended.

Tax Reduced Because of Holder Assessment

The County Board of Taxation, it was announced, has reduced the assessment on the Rahway (N. J.) Gas Light Company's property in Rahway $5,000, making the net assessment $16,000. The reduction was decided upon after an inspection of the property by the board members.

The Gas Light Company claimed its property had been illegally assessed because the assessors included the company's gas holder. It was the contention of the company that the holder is subject to State tax, under Chapter 25, of the Laws of 1919, in lieu of either county or municipal taxes.

50 Cents for Natural in Canada Because of Shortage

The Provincial Natural Gas Company of Bridgeburg, Ontario, effective with the September bills, will increase the price of natural gas from 40 to 50 cents per 1,000 cu. ft. D. A. Coste, superintendent of the company, has also issued a request that gas be no longer used for heating purposes but for cooking and water heating only.

In announcing the latest increase Superintendent Coste declares that the failure of the company to find new wells and the diminishing supply are the main reasons for the increase. He said gas manufactured from coal, containing only six-tenths of the heat of natural gas, is selling across the line for $1.75 per 1,000 cu. ft., while 50 cents is the new rate on this side of the line.

Mr. Coste says the company has the right under its contracts to increase the price to 50 cents; that it did not do so during the war owing to the heavy calls on its patrons for patriotic, Red Cross and other funds.

Haverhill Company Granted 10-Cent Increase

The Massachusetts Gas & Electric Light Commission approved the request of the Haverhill Gas Light Company for an increase from 90 cents to $1 per 1,000 cu. ft. According to the decision of the commission, the new scale will date back to July 15. Commissioner Solomon Lewenburg dissented. The company obtained a 90-cent rate April 1, 1918. This year a request was made for a 20-cent increase.

Rates Will Continue Indefinitely

Gas rates in Appleton, Wis., effective June 30, 1919, have been continued indefinitely by the Wisconsin Railroad Commission, on application of the Wisconsin Traction, Light, Heat & Power Company.

10-Cent Raise at Springfield, Mass.

Notification has been received of the granting by the State Gas & Electric Light Commission of the Springfield (Mass.) Gas Light Company's petition for increased rates of 10 cents per 100 feet effective Aug. 1.

25-Cent Increase at Crawfordsville

The Northern Indiana Gas & Electric Company has been given authority by the State regulatory commission to raise its rate at Crawfordsville, Ind., from $1 per 1,000 cu. ft. to $1.25.

Commission Extends Rates in Rockford and Quincy

Gas rates of the Rockford Gas Light & Coke Company were continued in effect until Sept. 30, 1919, by the effect of an order announced by the Illinois Public Utilities Commission.

The commission also extended to Dec. 31, 1919, the effective period of electric power rates of the Quincy Gas, Electric & Heating Company.

East Ohio Company Presents New Franchise

The City Council of Lakewood, Ohio, is considering a new 10-year franchise presented by the East Ohio Gas Company.

The proposed new rate is 48 cents a 1,000 ft. for the first 5,000 ft. consumed monthly and 5 cents a 1,000 for each additional 5,000 ft. with 63 cents a 1,000 for all over 15,000 ft. The company promises to make 1,500 needed extensions.

Consumers Company of Oklahoma Loses Rate Petition

After reviewing the case the Oklahoma Corporation Commission has rendered the decision that the gas rates in Ardmore and Carter Counties, Oklahoma, should not be raised at this time other than those applying to corporations or industries using gas for manufacturing purposes, where the price paid was 18 cents or less per 1,000 ft.

The case was heard in the Ardmore district court room, March 20, before Commissioner Campbell Russell.

Andrew Biddle, then city attorney, presented the case of the people and the matter, taken under advisement, has been pending since that time.

The decision of the corporation commission is considered a victory for City Attorney Biddle in behalf of the people, as it was freely predicted before decision was rendered that the Consumers Light Company would be granted the increase asked for.

Annual Report of United Light & Railways Company

The annual report of the United Light & Railway Company, which operates public utilities in Iowa, Michigan, Indiana and Tennessee, is just published, and shows the effect of the increase in operating expenses common to all public utilities this year. Although gross earnings were $9,176,442, compared with $7,853,909 in 1917, the net earnings were $2,761,336 against $2,807,002 in 1917, and the net income was $1,055,767, compared with $1,204,571 in 1917. For 1918 the earnings were equivalent to 10.42 per cent on the preferred stock, and 6.51 in the common.

The company set aside $1,107,738 for maintenance and depreciation, and expended $335,758 on subsidiary plants; issues aggregating nearly $817,000 are acquired or retired, while bond secured notes to the extent of $1,820,500 were issued for construction work. The balance sheet shows an increase in investment account of $1,731,029, as against a net increase of $1,205,572 in funded liabilities. Current assets of $2,514,871, compared with $2,584,188 in 1917; and current liabilities were $1,291,406 as against $1,336,638 in 1917.

Question of Municipal Ownership Again Received in Illinois

A question concerning the municipal ownership of public utilities in Illinois, intended to be framed as instructions to the delegates to the Constitutional Convention, has been unanimously endorsed by the Gateway Amendment League. The revival of the utility ownership fight, which failed before the last Illinois legislature, was thus brought about, and indications are strong that delegates may be instructed to vote upon the question at the convention for the revision of the basic law of the State. The League, meeting in a convention at the Hotel Morrison, August 8, with about 125 delegates, was unequivocal in its support of the plan for public ownership, combined with the referendum and recall.

In order to place the question upon the ballot a 10 per cent vote of the people of the State will be necessary, or approximately 200,000 names. The work of circulating the petitions already is under way in Chicago, directed by a non-partisan campaign committee of which former Governor Edward F. Dunne is the chairman. Delegates to the convention of the League included representatives of the Home Rule League of Illinois, the Illinois Municipal League, the Illinois State Grange, the new Labor Party, the Illinois Federation of Labor, and several women's organizations. The resolutions were reported by a committee consisting of Willis J. Spaulding, commissioner of Springfield; Eugene Frey, of Argyle, lecturer of the Illinois State Grange, and Mrs. Wallace Roberts of Chicago.

The proposition endorsed was as follows:

"Shall the members of the Fifth Constitutional Convention be instructed to submit to the electors constitutional provisions granting to the

State and to cities, towns, villages and other municipal corporations and districts the power to acquire, outside of and beyond any constitutional debt limitation, income producing utilities such as water works, gas works, electric light and power plants, street railways, urban and interurban transportation systems, telephone and telegraph systems, elevated railways, warehouses, elevators, wharves, docks and cold storage plants, and stock yards abattoirs and mines."

Citizens Interested in Property Values Protest Against Common Council's Protest Against Gas Rate Raise

Residents of Bronx Manor Park will petition Mayor Wallin and the common council to withdraw the city's protest against the schedules of increase of the Westchester Lighting Company in its charges for gas. The city has entered a protest to the new rate, which is 25 cents above the old rate, with the Public Service Commission of the Second District.

A copy of the petition was presented to the *Yonkers Daily News* by two of the protestants, Prof. Alfred Remy and Paul E. Lindblad, who asserted that the communication is not to be regarded as propaganda for the lighting company. The petition refers to promises of gas extensions, under the new schedules of prices, made by officials of the lighting company, one of whom, Dr. Benjamin Stilwell, is the uncle of Alderman Frederick H. Stilwell of the ninth ward.

The petition follows:

"Hon. William J. Wallin, Mayor of the City of Yonkers, and Members of the Common Council.

"Gentlemen: We, the undersigned, residents and taxpayers of Bronx Manor Park, in the ninth ward of the city of Yonkers, respectfully request your honorable body to withdraw your protest against the new rate of $1.25 per 1,000 cu. ft. of gas, which has become effective on Aug. 5.

"The reasons for our request are as follows:

"1. In view of the fact that all commodities have increased considerably, it seems to us that an increase of 25 per cent in gas is very moderate, especially when taking into consideration the enormous increase in the cost of raw materials and labor.

"2. Last spring a committee representing the undersigned called upon Mr. Stratton, the president of the Westchester Lighting Company, to request the laying of gas pipes in Bronx Manor Park. At that time Mr. Stratton submitted to us figures which proved conclusively that with the rate of $1 per 1,000 cu. ft. prevailing any extension of service to outlying districts was out of the question. He also told us that the price at which gas was then furnished to the city of Yonkers had been fixed eighteen years ago. We believe it needs no argument to show that what was a fair price eighteen years ago cannot be so regarded to-day, in view of the actual decrease in the purchasing power of the dollar.

"3. The further development and growth of the city of Yonkers are inseparably bound up with the improvements made in the outlying, undeveloped districts. Any obstruction in the way of such improvements inevitably retards the growth of the city as a whole. With an increase in the number of buildings the tax rate will always be moderate; whereas suspension of building operations and the nominal assessments levied on unimproved lots are bound to result, sooner or later, in increased tax rates.

"4. The first question asked by prospective buyers or builders in unimproved localities seems to be: 'Is gas available?' Such has been our experience, at least, here in Bronx Manor Park. Lack of sewers and paved streets seems to be an item of secondary importance compared to the question of availability of gas.

"5. We have noted, as a matter of fact, that since the close of the war building operations have been resumed on all sides around us, in Bronxville, Tuckahoe, Crestwood and Mount Vernon; also in Bronxville Terrace, Armour Villa Park and Cedar Knolls (all in the tenth ward of the city of Yonkers), while here in Bronx Manor Park there are no signs of resuming building operations. The simple explanation is that all the above-mentioned localities have gas mains, while we have not.

"6. With the new rate of $1.25 in effect, our most urgent need of gas can, and will, be met immediately, for Mr. Stratton has assured us that all plans have been drawn, specifications made, and the necessary materials are now stored in the yards of the company. The result of the installation of gas in this section will be the resumption of building operations which have been suspended for seven or eight years.

"7. While we, the undersigned, present this earnest plea for the withdrawal of the objections which your honorable body has seen fit to raise against the increase of the rate of gas, we trust that this petition will not be construed as an expression of mere selfish interest. As set forth under Section 3, we are only one of the undeveloped districts, all of which would benefit equally with the new gas rate in effect.

"We hope that your honorable body will give serious and impartial consideration to the arguments here presented.

"Respectfully submitted,

"Anna Heuberger, W. Homer Hendricks, Edgar A. Gerst, J. R. Grier, William Bernd, Mr. and Mrs. Ilse, Mrs. K. Steinmann, Mary A. Smith, Hobart S. Bird, L. V. V. Armstrong, Ada L. Challis, William H. Smith, S. G. Hooper, F. D. Connor, S. R. Shanks, F. J. Speidel, Theodore S. Gould, Harley Laporte, Mary J. Naughton, Alfred Remy, Frederick B. Biddle, Henry Prange, Nora Zhitlovsky, Victoria Dreyfus, Anna M. McClusky, Mrs. M. G. Stroub, W. Ormiston Taite, George C. Riggs, John M. Lester, Mrs. D. L. Furcht, Mildred Keen, Paul E. Lindblad, James W. Post, Maud Chambers, B. C. Brown, Charles W. Erwin, G. C. Reinhardt, E. S. Cattell, R. A. Broadfoot, Mrs. Ray Raved, C. A. Pfeil, J. E. S. Barker, Schuyler Patterson, Anna F. Luke, Carl H. Krieg, C. C. Ballard, Nathaniel Michel, Dr. M. Fuchs, Mrs. G. E. Ryan, Anna J. Eaton."

High Street Opening Fees Stand in Way of New Main for Winston-Salem

Relief from the heavy penalties imposed for tearing up the streets, in addition to putting them back as near as possible as they were before, was asked of the Board of Aldermen last night by the Winston-Salem Gas Co., represented by Attorney A. M. Clement, in laying a proposed eight-inch gas main from the corner of Church and Third Streets, by way of First,

Brookstown and Shallowford to the corner of Shallowford and West Fourth Streets.

Mr. Clement stated that the fees or penalties imposed by the city for tearing up the streets, in addition to replacing them as before, is almost prohibitive, amounting to about as much as the cost of material and labor in laying the main.

The object of the law, he said, was evidently to prevent as much tearing up of the streets as possible, but that the placing of this line, nearly a mile in length, is a different proposition and the company should have some consideration in putting down such a main. Some of the street is in bitulithic, but most of it is unimproved along the proposed line, he said.

The line that supplies the people of West End with gas now is six inches a part of the way and four inches the remainder. This does not permit the people to secure sufficient gas for their needs and there is no way of helping the situation, other than laying a larger main, said Mr. Clement.

The question of raising the gas rate has been discussed, he said, but this would work a hardship on the consumer and the main could be laid without an advance in the rates if the prohibitive fees are removed, at the same time giving the people of West End better gas service.

Alderman L. F. Owen stated that the law was designed to prevent the tearing up of the streets by property owners and as an inducement to get them to make all necessary connections before permanent paving is put down. Preventing entirely the cutting up the streets at times is practically impossible, said Mr. Owen, who stated that he would be glad if some arrangements could be made to relieve the company and give the consumers good service.

Mayor Gorrell appointed as a committee Aldermen Owen, Hanes and Stith to look into the matter and see if a change in the ordinance to give the desired relief is desirable.

New Compound for Cleaning Gas Meters

The Standard Chemical & Supply Company, Cambridge, Mass., after a careful study for a number of years of the efficiency of cleaning gas meters, has manufactured a compound for that purpose called Davis Brown Compound.

This contains all the properties of potash, which is now hard to obtain, and it is claimed that 7 lb. make 45 gal. of solution.

The manufacturer will be pleased to send further information upon request.

Decision in Holland Gas Case

The Judge of the Circuit Court has issued an injunction restraining the Holland (Mich.) Gas works from closing its plant or charging more than $1.25 per 1,000 cu. ft. for gas. The injunction was served on Charles W. McGuire, of Chicago, who recently purchased the plant at a bankruptcy sale. Mr. McGuire has notified the council that the price of gas to consumer likely would be $1.50 net in order to insure a working profit on the investment. The city and company were requested to lay their case before the Michigan Utilities Commission. The city complied, but the company did not and as a result the injunction was issued.

Supply of Natural for Domestic Purposes Doubtful

Consumers Purchasing Coal Stoves

The indications are at present that there will be little gas used for manufacture purposes during the coming winter.

During the past few years the supply has been getting so scarce that the different gas companies were forced to shut off the manufacturers' supply when the weather was hovering around the zero mark. The gas companies drilled many wells but the extensive drilling campaign got them little gas. The situation is so serious that it is doubtful if there will be sufficient gas for domestic purposes and realizing this condition hundreds of families have purchased coal stoves.

Laclede's Rate Increase Inadequate to Meet Dividends

Regular June and September Dividends Passed

Employees of the Laclede Gas Light Company, of St. Louis, have been granted increases in wages of about 15 per cent, which will affect back salaries to August 1. This is announced despite the fact that the regular June dividend has been passed and it is announced that no dividends will be paid to stockholders in September.

In announcing the increases in the employees' wages, the company calls attention to the fact that the Laclede Gas Light Company applied to the Missouri Public Service Commission for an increase in rates on July 10, 1918. The commission after nearly a year's delay, granted an increase of less than ten cents per 1,000 cu. ft. This increase was inadequate to meet the increased cost of operation and it is necessary therefore, the company says, to withhold the regular June and September dividends to stockholders.

Greenfield Gets Small Raise It Is "Clearly Entitled To"

Following a public hearing on the petition of the Greenfield Gaslight Company, of Greenfield, Mass., for permission to raise the price of gas from $1.70 to $1.80 per 1,000 cu. ft., the Electric Light & Gas Commissioners have ruled that the company is clearly entitled to a raise in prices as asked. It was shown at the recent hearing that the company had actually lost money at the price it was getting for its product. The ruling handed down by the commissioners allows the raise of 10 cents per 1,000 cu. ft. on all gas sold after July 1, 1919. The company announces the new rates to go into effect August 1.

Houston Company May Get Half of Raise Asked

Based on the report of Lamar Lyndon, engineering expert of New York, on the valuation of the Houston Gas Company's plant, it is likely that the gas rate for that city will be raised from $1 to $1.10. Mr. Lyndon's report recommends a raise of 9 cents and it is thought that 10 cents will be allowed the company by the city.

The new rate, if granted, will be given on the theory that the gas company should be allowed a 7 per cent profit on its investment. Some time ago the company asked for a rate of $1.20, and the city refused to grant it until the affairs of the company were investigated.

Batesville Company Asks Raise Pending Arrangements to Go Out of Business

The Batesville Gas Company has again petitioned the Public Service Commission of Indiana for an increase in its rates and the commission has fixed Aug. 28 as the time when the petition will be heard in the rooms of the commission at the State House.

The gas company is now receiving a minimum rate of $1.60 for the first 2,000 cu. ft., or fraction thereof, used per month; 80 cents a 1,000 for the next 5,000 cu. ft., used per month; 75 cents a 1,000 for the next 20,000 cu. ft., used per month; 70 cents a 1,000 for the next 20,000 cu. ft. used per month; and 65 cents a 1,000 for all over 55,000 cu. ft. used each month.

They are asking for a minimum rate of $2.00 for the first 2,000 cu. ft., $1.00 per 1,000 for the next 5,000 cu. ft., 75 cents a 1,000 for the next 20,000, cu. ft., 65 cents a 1,000 for the next 20,000 cu. ft., and 65 cents a 1,000 for all over 50,000 cu. ft. used per month.

The gas company sets forth in its petition that it is not receiving adequate returns upon the amount invested, that material and labor have increased and that it cannot afford at the present rate to repair the line and put the wells in condition. This is practically the same claim made by the gas company in its former petition for an increase in rates.

The gas company further contends that it now has the right to dispose of the plant and discontinue the service and asks that the new rates be effective until such time as the petitioner may be able to dispose of its plant, take up its pipe lines and discontinue service.

Surcharge to Existing Rate Schedule Granted to Medford Company

Following an application of the Medford (N. J.) Gas Company to the State Board of Public Utility Commissioners for an increase in rates for gas, the board, according to announcement, has determined that the company may add as a surcharge to its existing schedule of rates the following clause: Each connected customer served through a three or five-light meter shall pay a fixed service charge of twenty-five cents per month without gas; for customers served through meters of larger capacity the monthly fixed service charge shall be increased one cent for each one-light increase in capacity above a five-light meter. The application asked for the rate increase to raise additional income to pay expenses, taxes and fixed charges and alleged that the company was not able to give the physical valuation of its plant, while an itemized statement was furnished of "everything represented by the bonded debt and capital stock of the company." The company's rate at the time of the filing of the application was $1.40 per 1,000 cu. ft. of gas sold and a minimum bill of $3 for six months.

According to testimony submitted at a hearing on the application by the board, the original securities issued by the company were $25,000 principal amount of bonds and $25,000 of stock, while it was also stated that the $25,000 par value of bonds represented the cost in money of the original plant of the company to which additions of about $2,000 had been made since 1904, which would indicate a total original cost of between $27,000 and $28,000.

Blackstone Valley Company's Customers Take Up Bond Offering

The Blackstone Valley Gas & Electric Company's offering of 1,300 shares of common stock, with a limit of 10-share lots, has all been placed among customers of that utility corporation, who were not previously stockholders. The offering was patterned upon that recently made by the Narragansett Electric Lighting Company, of about 2,000 shares (and for which the Narragansett received applications for more than 5,000 shares) at $66. The Blackstone offering also was at $66, the common stock having a par of $50 and having an 8 per cent dividend rate. The par of the preferred stock is $100. Installment payments on the common are made at the Slater Trust Company, Pawtucket, the Woonsocket Institution for Savings, Woonsocket, or at the offering firm's office in Providence. The common stock of the Blackstone Valley Gas & Electric Company has heretofore been closely held by inside interests largely in Pawtucket and Woonsocket. The argument is advanced that it is now recognized as desirable, both for the community and the company, that its stock should be as widely distributed as possible among the consumers of gas and electricity. In this way a community of interest is established, which facilitates the settling, in a reasonable and fair way of questions of rates and service.

Rates Increased in Toronto Canada

An increase in the price of gas to $1.10 gross and $1 net per 1,000 ft. instead of $1 gross and 90 cents net, as at present, will be put into effect by the Consumers Gas Company, of Toronto, Canada, beginning with the August bills. The current bills going out for gas burned during July will carry the notification.

"The increase is due to the fact that the price of coal, the price of labor, and everything else we must buy has gone up," said Assistant Manager Armstrong. "Railroad rates have also gone up. We can't buy any more for a dollar than anybody else."

Immediate Relief Granted Lansing Company

The special gas committee of Lansing, Mich., in its findings not only has recommended some amendments to the present franchise of the Lansing Fuel and Gas Company, but also that the company, as a matter of immediate relief be allowed to charge $1.10 net per 1,000 cu. ft. from July 1. In compliance with this recommendation the company is charging that rate.

The situation showed that for a few months previous to that time the company had been losing probably $5,000 a month. It was the opinion of the committee that in face of the fact as found by it on careful investigation that the company needed $1.10 to keep above the deficit point, it was highly advisable to allow it to begin the charge at once and not be compelled to continue operating at a loss during the four months or more before the amended franchise can be voted on.

N. Y. Consolidated Engineer on the Stand

Court Denies City Right to Appear

Herbert L. Alrich, assistant construction engineer of the Consolidated Gas Company, took the stand at the hearing before Abraham S. Gilbert, special master, at which the company hopes to prove the eighty cent gas law unconstitutional. The Deputy Attorney General, Mr. Chambers, and John P. O'Brien, representing the District Attorney's office, cross-examined the witness.

Mr. Chambers had the company's engineer explain the type of every building belonging to the company in Manhattan and also how the machinery in the plants functioned. The gas company is trying to prove that the valuation of the company's plants is $69,000,000, and that under the eighty cent gas rate a legitimate income cannot be realized on the investment. Attorneys for the State and the city want to show that many of

the plants are idle, thus decreasing the valuation.

Judge Manton of the United States Circuit Court denied the plea of Corporation Counsel Burr that the city be permitted to appear as a defendant in the suit of the Consolidated Company. The action names as defendant the Public Service Commission of this district, Attorney General Newton, and District Attorney Swann.

In his opinion Judge Manton said that the law seemed to be well settled against the city's claim, that if a stay in taking of testimony in the suit was granted the city would have to give a bond protecting the complainant from loss by the delay, and that the city should not take such a risk. Mr. Burr has a right to appear in the action as the counsel for District Attorney Swann.

Kansas Company Changes Name

At a recent special meeting of the stockholders of the Sedan (Kans.) Gas & Water Company the name was changed to The Sedan Gas Company. When the company was organized the city had no water works and the company anticipated a possibility of branching out into water supply, but subsequent events forestalled action of that sort hence the word "water" became a misnomer as well as a nuisance.

Personal Notes

J. L. THOMAS has been designated to have charge of the new office of the New York and Queens Gas Company at Douglaston, L. I.

GEORGE W. SCHWINGLE, formerly in charge of a plant of the Rochester, N. Y., company, died Aug. 11, after a long illness. He was 54 years old.

JOHN KEAN, lately of the United States Expeditionary Force, has been elected treasurer of the Elizabethtown (N. J.) Gas Company and president of the Rahway (N. J.) Gas Light Company. In the first office he succeeds Julian H. Kean, who continues as president of the Elizabethtown Company, and in the second he succeeds Hamilton F. Kean. John Kean is a son of Hamilton F. Kean, and is 30 years old. After his graduation from Harvard he served an apprenticeship in the Elizabethtown Gas Light Company's works in Erie Street, working as a fireman and engineer, to obtain the practical training to fit him as an executive officer of the company. Later he entered the law firm of Lindabury, Depue & Faulks in Newark, and attended law school in New York, gaining admission to the bar as an attorney about four years ago. He attained the rank of captain in the military service.

W. A. HIDDLESON, formerly in charge of the El Campo, Texas, property of the Doherty organization, has been appointed general manager of the Bristol (Tenn.) Gas & Electric Company.

OTTO E. OSTHOFF, vice-president of H. M. Byllesby & Co., has been elected a director of the Great Lakes Trust Company, Chicago's newest bank which opened for business July 21, and received more than $3,000,000 of deposits the first day.

Construction Notes

New Main at New Orleans to Be in Service in Fall

Progress is being made by the New Orleans Railway & Light Company in the installation of their new gas main to the lower section of the city. John S. Bleecker, general manager, Saturday announced that the line had been laid across the Old Basin canal, and that this difficult work practically over with, the rest would be easy. It is expected to have the gas ready for use early in October.

New York and Queens County Company Starts 12-Mile Extension

Maynard H. Spear, secretary of the New York & Queens Gas Company, in a communication to Alfred M. Barrett, deputy public service commissioner, states that his company has placed an order for all the pipe required for the extension of gas mains from Bayside to and through Douglaston and Douglas Manor, and that the mills have promised complete shipment this month. Orders have been placed for practically all the other material, and contracts have been let for the laying of the pipe. He states that he expects to start excavation as soon as the pipe arrives.

The gas company says the work will cost $100,000 and that more than twelve miles of high-pressure mains will be laid. Sullivan Bros., of Flushing, have the contract.

Following the order of the public service commission directing an extension of the mains to Douglaston, the company took the matter to the courts on the ground that it would not pay it to make the extension. The case was carried to the United States Supreme Court, and the commission was upheld.

Recently, upon the recommendation of Commissioner Barrett, the public service commission issued an order providing that when the proposed service shall have been instituted by the gas company the testing of the gas shall be done in Flushing rather than at the point of delivery. The change will not affect the quality of gas furnished in Flushing and Bayside.

The commission has held that there was merit in the contention of the gas company that if it were to pump gas from Flushing to Douglaston and Douglas Manor, a distance of about six miles, under such pressure as would assure a continuous supply, the gas upon delivery probably would not fully comply with the legal requirements calling for the maintenance of the 22-c.p. standard.

The Douglaston Civic Association, which has been leading the fight for the extension of gas mains, is willing to accept gas under the conditions provided for in the order.

Improvements at Bisbee, Ariz.

The Bisbee (Ariz.) Improvement Company has been authorized by the State corporation commission to issue 5,000 shares of stock, at a par value of $10, for the purpose of improving the company's gas and electric plant.

Steel Company Installs Two Additional Coke Ovens

The Electric Company, of Chicago, has added two more coke ovens to their present equipment. This represents additional gas consumption from the Peoples Gas Light & Coke Company of 200,000 cu. ft. a month.